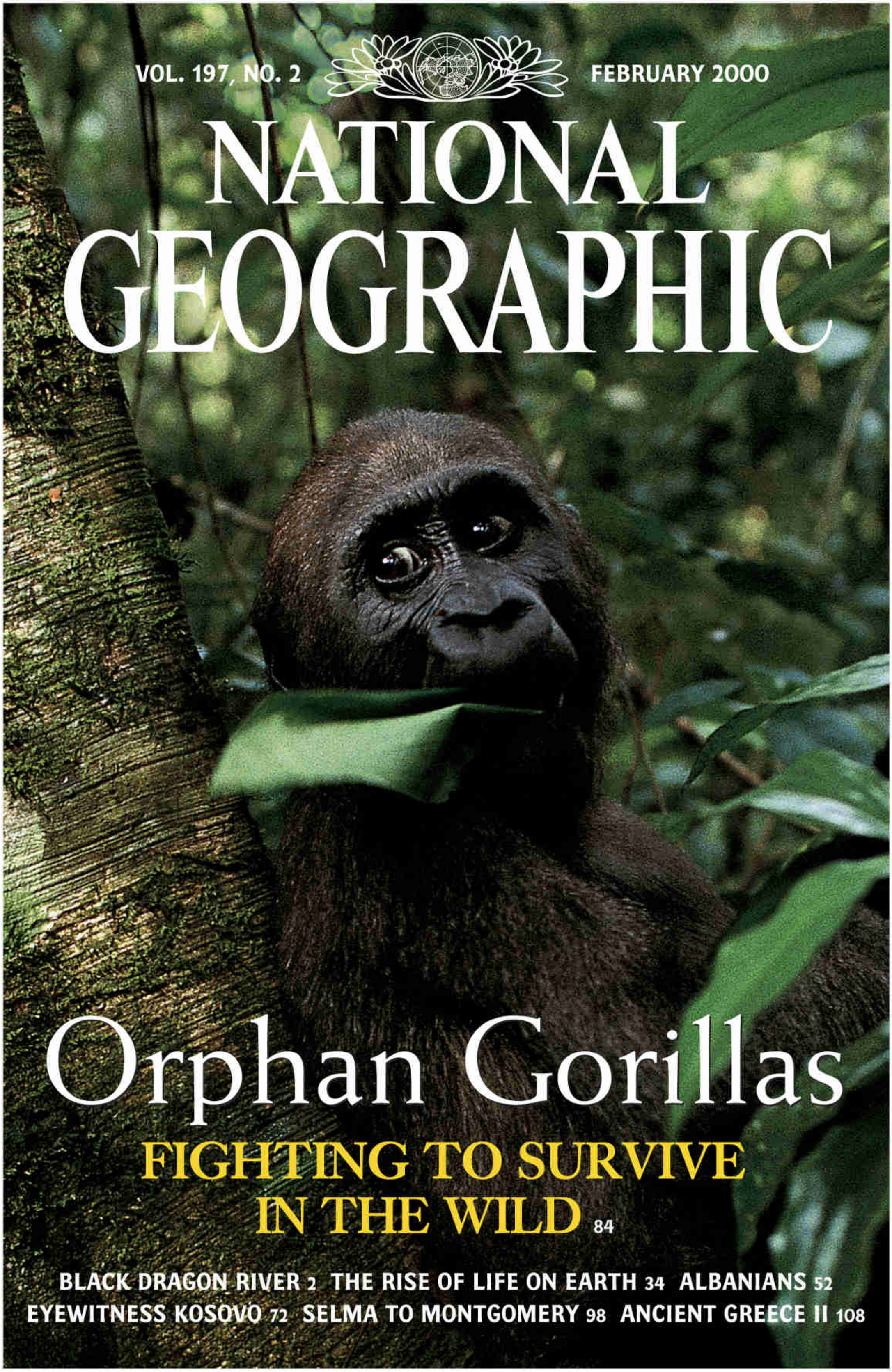
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Supplement to NATIONAL GEOGRAPHIC, February 2000

PLIGHT of the REFUGEES

Produced by National Geographic Maps for National Geographic Magazine

NATIONAL GEOGRAPHIC SOCIETY

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Washington, D.C., February 2000

The world tends to focus on a few refugee tragedies at a time: East Timorese escaping rampant violence, ethnic Albanians driven from Kosovo. But the refugee crisis is broader and more persistent than today's headlines. Worldwide the United Nations counts more than 11 million as refugees—people forced from their countries to escape war or persecution due to race, nationality, religion, or political opinion. Another 17 million or more are displaced within their own countries. The United Nations, individual countries, and nongovernmental organizations attempt to settle disputes, help the displaced, and repatriate people, but these groups have yet to find a panacea for the hatred and unrest that create new refugees.

Rwandan refugees returning from Tanzania, 1996. R. CHALASANI, UNHCR





CANADA
Granting asylum to about 50,000 refugees in the past five years—most from Sri Lanka, Iran, and Somalia—Canada receives about half that many new requests each year. Applications take just under a year to process, so tens of thousands await decisions on their status.

UNITED STATES
The United States offers permanent protection to more refugees than any other country. Over the past decade more than a million people were admitted to the U.S. under its resettlement program, and the nation will accept as many as 90,000 more this year.

GUATEMALA
After decades of political upheaval, nearly all the 45,000 Guatemalan refugees have returned from Mexico. The government's reintegration program for returnees faces the challenge of determining who owns property that was abandoned as long as 20 years ago.

LIBERIA AND SIERRA LEONE
Related civil wars in these countries have prompted waves of forced migration within each nation and across borders. Political stability seemed possible with elections in both countries, but violence continues despite a recent peace agreement in Sierra Leone and the presence of United Nations troops.

ANGOLA
Violence between the government and rebel forces has driven more than a million people from their homes. Many now live in squalid makeshift settlements or camps on the edges of cities.

SUDAN
The world's largest number of internally displaced persons—some four million—wander within Sudan, fleeing civil war. As many as two million have made their way from the war-torn south to the north, especially near Khartoum, where hundreds of thousands have been placed in camps.

GERMANY
As the West European nation most accessible to the old Soviet Union, Germany has taken the brunt of post-Cold War asylum seekers. Some 350,000 refugees have escaped violence in the Balkans by fleeing to Germany. Most were granted only temporary sanctuary, and many have returned home.

IRAQ
Four battlefronts displace about a million Iraqis within their own country. Kurdish groups in the north fall into fierce conflicts; Turkish troops frequently invade from the north; and Saddam Hussein's forces harass both northern Kurds and southern Shiite citizens.

ARMENIA
Nearly all the 229,000 refugees in Armenia poured across the border to escape fighting in neighboring Azerbaijan. Others are from Chechnya and Georgia. Economic stagnation, high unemployment, and an acute housing shortage have magnified the refugees' hardships.

INDIA
People fleeing violence in troubled Afghanistan, Sri Lanka, Myanmar, and Bhutan make up most of India's 292,000 refugees. In the northern city of Dharmsala, Tibetan refugees have established what is, in effect, a Tibetan government-in-exile.

MYANMAR
As government forces fight groups of ethnic minority insurgents, as many as one million people have been displaced or forcibly relocated, most in the eastern portion of the country. Many residents have crossed into Thailand to escape forced government relocation.

MOZAMBIQUE
In one of the world's most successful cases of repatriation, 1.7 million refugees returned from Mozambique's six neighboring states following the 1992 peace agreement that ended 16 years of civil war.

SRI LANKA
More than 100,000 refugees returned from India when it seemed a civil war had ended in the early 1990s. Now new fighting has displaced up to 800,000, many in the Jaffna region.

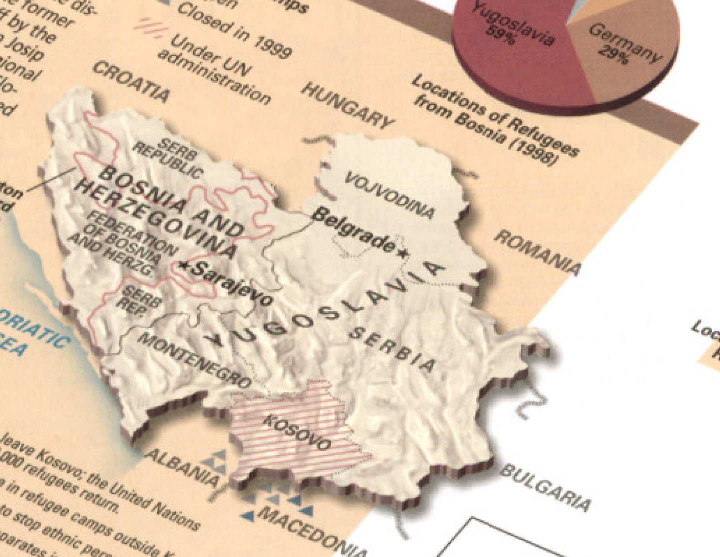
EAST TIMOR
Hundreds of thousands of people were forced to leave their homes in this region, then a province of Indonesia, while under fire from rampaging death squads—some reportedly composed of government troops. The violence followed a 1999 plebiscite in which East Timorese voted overwhelmingly for political independence. Last October Indonesia finally relinquished its claim to East Timor.

COLOMBIA
Fighting between government forces and armed rebels has displaced nearly 1.5 million civilians in recent years. One in 40 has had to leave his home. Thousands more have fled to other countries but often are not welcome. Today's conflict has been compared to the Colombian civil war—La Violencia—that began 50 years ago, displacing two million people and leaving as many as 200,000 dead.



1999 Over 370,000 are added to Colombia's displaced population.
1998 More than 300,000 newly displaced people flee the turmoil of rural Colombia.
1993 Growth of cocaine and heroin cartels adds to violence and displacement caused by armed guerrillas and paramilitary groups.
1948-1958 An undeclared civil war known as La Violencia is fought.

YUGOSLAVIA AND BOSNIA
Buffeted by war and ethnic clashes, the people of this region have faced one national displacement after another since the disintegration of the former Yugoslavia, set off by the death of strongman Josip Broz Tito in 1980. Regional leaders, most recently Slobodan Milošević, have used ethnic distrust as a means to consolidate power. This has led to repeated episodes of violence, military occupation, and ultimately ethnic cleansing as people were forced to leave their homes or risk being killed.



1999 In June, Serbian troops are forced to leave Kosovo; the United Nations starts administering Kosovo—over 500,000 refugees return.
1999 In May, some 800,000 ethnic Albanians are in refugee camps outside Kosovo.
1999 In March, NATO begins bombing Yugoslavia to stop ethnic persecution in Kosovo.
1995 The Dayton Peace Accord ends war; Bosnia separates into a Muslim-Croat federation and a Serb republic.
1992 Bosnia declares independence from Serb-dominated Yugoslavia; Bosnian civil war starts.

MIDDLE EAST
Palestinians are the largest group of refugees in the world, reaching 3.6 million this year. A third of these refugees still live in camps constructed after the 1948 Arab-Israeli War, set up in the West Bank and Gaza Strip and in Jordan, Lebanon, and Syria. The Palestinian refugee problem has yet to be solved, but peace talks with Israel are under way.



1999 Final status talks resume on Palestinian autonomy in the West Bank and Gaza Strip.
1995 The Israeli military hands over major Arab cities in the West Bank to Palestinian administrators.
1993 Peace agreement is signed by Israel and the Palestine Liberation Organization.
1982 Israel invades Lebanon to stop attacks on Galilee.
1973 Egypt and Syria launch surprise attack on Israel.
1967 Palestinians flee when Israel captures Gaza and West Bank during the Six Day War.
1948 War divides Palestine between Arab and Israeli forces; Palestinians leave Israeli areas.

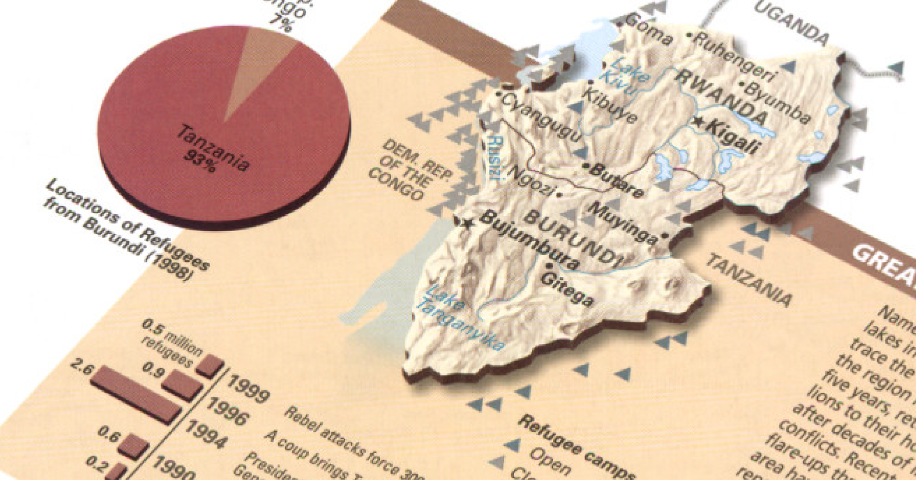
Numbers show refugees registered with United Nations Relief and Works Agency (UNRWA)

AFGHANISTAN
Plunged into turmoil since the Soviet invasion of 1979, Afghanistan has created the second largest number of refugees, 2.6 million. Hundreds of thousands more are displaced within Afghanistan. Most have been forced from their homes by the fighting between Taliban forces and other political factions. Recently women have left to escape harsh policies that deny them education, work, and health care.



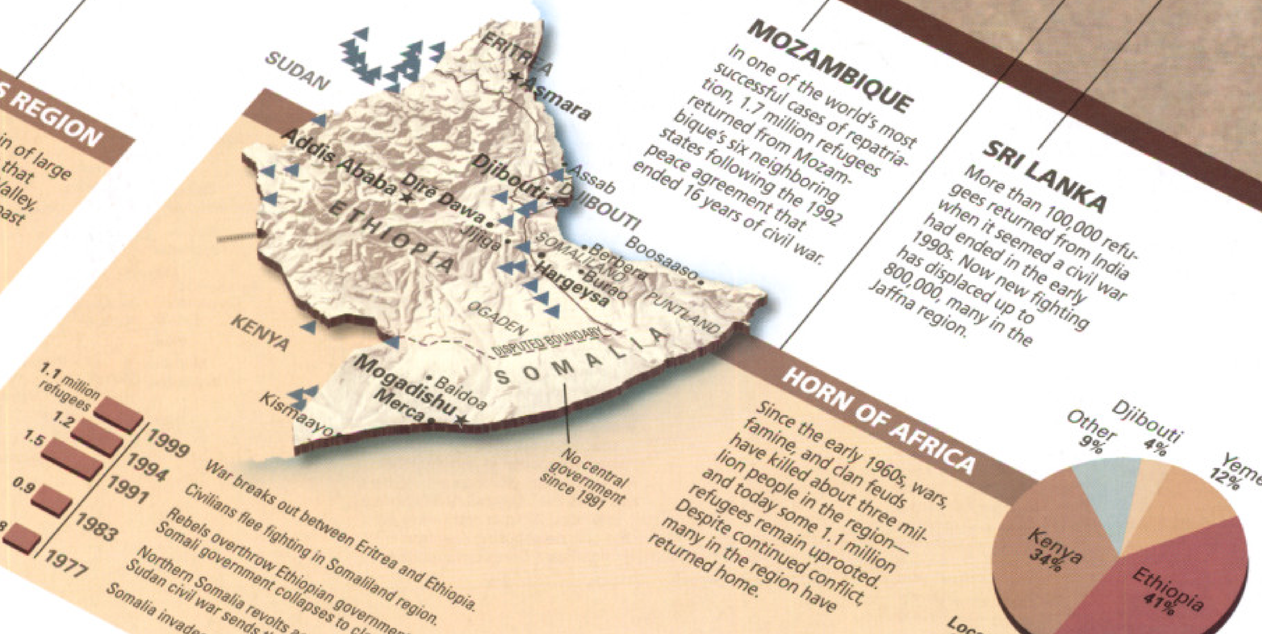
1999 Taliban offensives displace some 200,000 people.
1996 Taliban forces capture cities of Jalālābād and Kabul.
1994 The Taliban, an extremist Islamic militia, forms in southern Afghanistan.
1990 Refugee numbers reach peak despite continued repatriation.
1988 Soviet troops begin withdrawal from Afghanistan.
1983 Civil war rages; Afghan government forces and Soviet allies fight guerrillas.
1979 Invasion by 80,000 Soviet troops supports a pro-Soviet Afghan government.

GREAT LAKES REGION
Named for a chain of large lakes in East Africa that trace the Great Rift Valley, the region has, in the past five years, returned millions to their homelands after decades of internal conflicts. Recent military flare-ups throughout the area have slowed the repatriation process and sparked new displacements, especially in the Democratic Republic of the Congo (formerly Zaire).



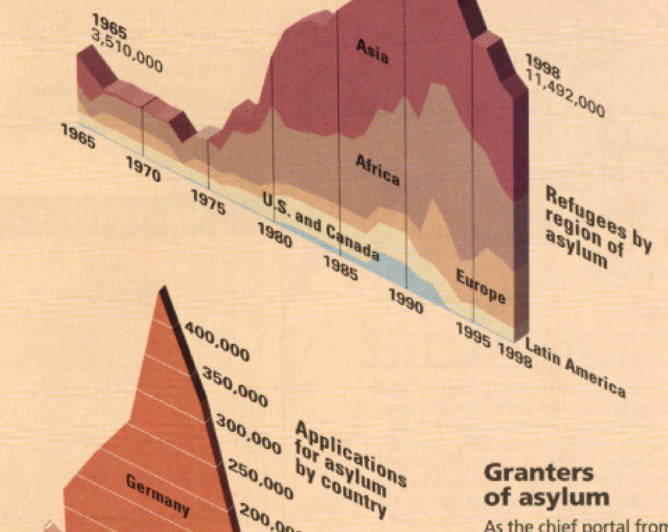
1999 Rebel attacks force 300,000 from their homes in Burundi (total displaced over 800,000).
1996 A coup brings Tutsis to power in Burundi. Rwandan refugees return from Zaire and Tanzania.
1994 Presidents of Rwanda and Burundi are killed when their plane is shot down over Rwanda. Genocide against Tutsis begins in Rwanda, but Tutsi forces prevail, and Hutus flood into Zaire.
1990 Tutsi refugees from Uganda start Rwandan civil war (1990-93).
1960-1989 Hutus rule Rwanda and Tutsis rule Burundi; periodically, Tutsi refugees flee Rwanda and Hutu refugees flee Burundi.

HORN OF AFRICA
Since the early 1960s, wars, famine, and clan feuds have killed about three million people in the region—and today some 1.1 million refugees remain uprooted. Despite continued conflict, many in the region have returned home.

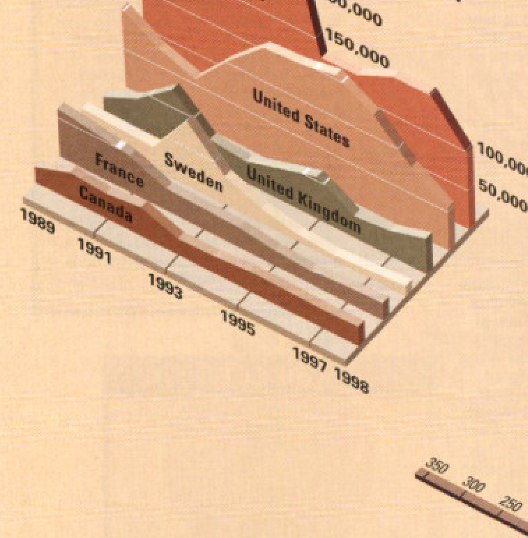


1999 War breaks out between Eritrea and Ethiopia.
1994 Civilians flee fighting in Somaliland region.
1991 Rebels overthrow Ethiopian government; Somali government collapses to clan militias.
1983 Northern Somalia revolts against government; Sudan civil war sends thousands to Ethiopia.
1977 Somalia invades Ogaden region.

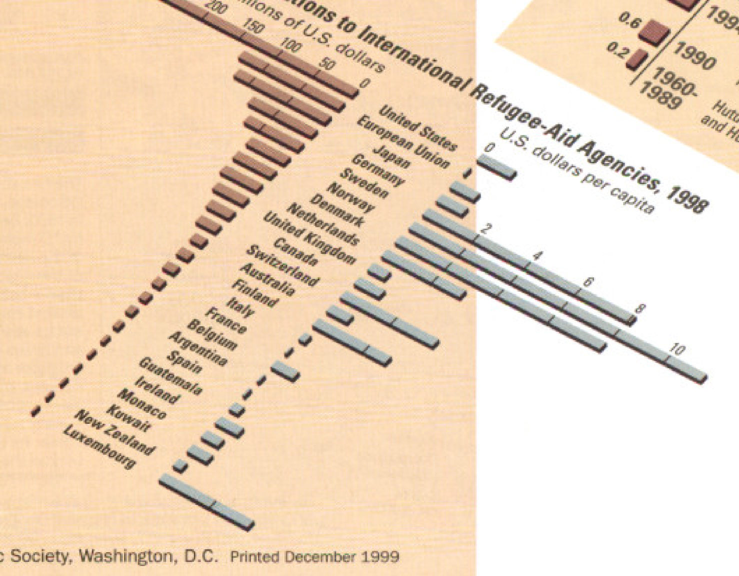
The world's refugees
Although Kosovar Albanians claimed headlines last year, relatively few of the world's refugees are in Europe. Most are Asian, primarily victims of conflict in Afghanistan. The spike in Africa's refugee population in 1994 was largely a result of the genocide in Rwanda that drove some two million people from their homes.



Granters of asylum
As the chief portal from the old Soviet bloc, Germany led the world in asylum applications in the early 1990s. (However, some developing countries that don't have formal application procedures probably host more refugees.) Recently the number of asylum seekers for many nations, including Germany and the United States, has leveled off or dropped, due in part to new government immigration restrictions and changes in the ways refugees are counted.



International generosity
On a total cash basis no nation comes close to matching the United States' contributions to international refugee-aid agencies. But per person several countries far outstrip the U.S. Many countries focus large sums on particular refugee problems, such as refugees' impact on the environment (Japan) and unique issues faced by refugee children (Norway) and women (Denmark).



Refugees
Defined by the United Nations as those who must flee their country "because of a well-founded fear of persecution for reasons of race, religion, nationality, political opinion or membership in a particular social group, and who cannot or do not want to return."

Asylum seekers
Those whose applications for refugee status are pending in a host nation.

Internally displaced persons (IDPs)
Those who have been forced from their homes for the same reasons as refugees but remain within the borders of their home country.

Repatriation
The process by which refugees voluntarily return to their homelands.

Refugee and IDP estimates vary widely because of changing factors such as counting methods, definitions, and political unrest.

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THE BALKANS



Invading hordes, ambitious empires, and the cultural divide between East and West have left the Balkan Peninsula with a legacy of continual conflict.

NATIONAL GEOGRAPHIC SOCIETY

THE OTTOMAN ERA

Arising in the late 13th century on the frontier between the Muslim and Christian worlds in Anatolia, Ottoman Turks pushed westward against the crumbling Byzantine Empire. By 1354 they had crossed into Europe. Better armed and organized than their opponents, over the next century they conquered most of the Balkan Peninsula and took Constantinople, the Byzantine capital, in 1453.

Under Süleyman the Magnificent the Ottoman Empire reached the height of its glory. Moving into Hungary, its armies fought a battle at Mohács in 1526 in which the Hungarian king died. Austria's Archduke Ferdinand then took over parts of modern-day Hungary—creating the core of the future Austro-Hungarian Empire—and Croatia. The Ottomans twice failed to capture Vienna, thus ending their expansion in 1683.

Taxes were mainly what the Ottomans wanted from their vast holdings. They had little interest in changing people's religion or culture and let Orthodox, Roman Catholic, and Jewish leaders manage the affairs of their own followers. As a result, religious and ethnic identities remained strong throughout centuries of Ottoman rule.

In the 19th century the Ottoman Empire began to disintegrate. Several countries broke away, and the Austro-Hungarian and Russian Empires pressed in from the north. Two Balkan Wars in the early 1900s left the Ottomans with a mere sliver of territory in Europe.



A NATO peacekeeper patrols Kosovo, the most recent source of conflict in the Balkans.
ALEXANDRA BOULAT

THE TINDERBOX OF WORLD WAR I

The Balkans were in turmoil, with each country trying to get a greater share of what the Ottomans once ruled. Serbia, in particular, had grand designs. Not only did it hope to unite most Orthodox Slavs into one nation, which would include territory in Austria-Hungary, but it also wanted a coastline. To counter Serbian ambitions, Austria-Hungary annexed Bosnia and promoted the creation of Albania as a separate country on the Adriatic Sea. Once that was accomplished, Serbia was landlocked.

On June 28, 1914, a Serbian nationalist assassinated Archduke Franz Ferdinand, the Austro-Hungarian heir. A month later Austria-Hungary declared war on Serbia—the start of World War I—and their allies took sides. Germany joined Austria-Hungary to form the Central Powers; Russia, France, and Britain—the Triple Entente—fought with Serbia. As it escalated, the war drew in other countries in the Balkans and beyond.

Fighting continued through 1918. In the end the Austro-Hungarian Empire was torn apart. Russia, which had pulled out of the war after the 1917 Bolshevik Revolution, lost territory. A short-lived Kingdom of Serbs, Croats, and Slovenes became Yugoslavia, or Land of the South Slavs. Greece was given land almost to Constantinople. In an effort to recapture land it held in antiquity, Greece then marched into Anatolia, starting another war. Atatürk, the father of modern Turkey, drove out the Greeks and overthrew the Ottoman sultan in 1922.



WORLD WAR II AND ITS AFTERMATH

The 1923 peace treaty between Greece and Turkey mandated ethnic population exchanges —Greeks living in Turkey were moved to Greece; Turks in Greece were moved to Turkey—giving each country a more homogeneous population. Few such exchanges occurred in the northern Balkans, where tensions simmered in multiethnic communities.

Starting elsewhere in Europe, World War II swept into the Balkans. Hungary, Romania, Bulgaria, and Albania (then part of Italy) were allied with the Axis countries, Germany and Italy. Yugoslavia joined them, but when anti-Nazi Serbian radicals took over the government in 1941, the German Army invaded. The Yugoslav Resistance—including the local Communist Party, or Partisans, led by Josip Broz, known as Tito—worked against the German occupation for the rest of the war.

After the Allied forces defeated Germany in 1945, the U.S.S.R. created the Iron Curtain, imposing Soviet-style communism in the eastern Balkans, which its troops had liberated. The Soviets broke with Tito, who applied a maverick communism and his own ideas for pan-Slavic cooperation in Yugoslavia. Greece, assisted by Britain and the U.S., restored its constitutional monarchy.

Tito died in 1980, and by the end of the decade communism had collapsed. With no overarching vision to keep it together, and with Serbia pressing for advantage once again, Yugoslavia began to splinter in a series of violent, ethnically charged conflicts.

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HUNGARY



POPULATION 10,186,000
GDP PER CAPITA $7,400
MILITARY SPENDING $645 million

Though not in the Balkans, Hungary has historic ties with the region. The Hungarian kingdom at its height in the 15th century stretched from Croatia to Transylvania. Ottoman and Austrian conquests in the 16th century included most of Hungary. Created in 1867, the Austro-Hungarian Empire lost World War I. As a result, Hungary gave up two-thirds of its territory and nearly two-thirds of its population.

HUNGARIANS

The word "Hungarian" comes from the Turkic on-ogur, or ten arrows, which may refer to the region's early Magyar tribes. Descendants of Finno-Ugric peoples, who lived between the Volga River and Ural Mountains, and Bulgar-Turkish nomads, Magyars make up most of Hungary's population. They speak a language related to Finnish. The breakup of the Austro-Hungarian Empire after World War I left the Romanian region of Transylvania and the Yugoslavian province of Vojvodina with large Hungarian enclaves.

SLOVENIA



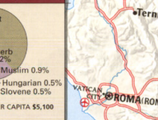
POPULATION 1,971,000
GDP PER CAPITA $10,300
MILITARY SPENDING $272 million

Settled in the sixth century by Slavs —a large group of related peoples, including Slovenes, from east-central Europe—this area was then conquered by a succession of empires. In the 13th century the Habsburg dynasty of Austria took control and ruled until the end of World War I. The most westernized and ethnically homogeneous of post-World War II Yugoslavia's six republics, Slovenia declared independence in 1991.

SLOVENES

Numbering only two million, Slovenes have the highest standard of living among the south Slavic peoples of former socialist Yugoslavia. Their language is related to Serbo-Croatian and written in the Latin alphabet. Overwhelmingly Roman Catholic, they owe the survival of their cultural identity through six centuries of Austrian rule to intense education carried out mostly by priests.

CROATIA



POPULATION 4,677,000
GDP PER CAPITA $5,100
MILITARY SPENDING $950 million

Another Slavic region, Croatia was carved up by competing states in the 15th and 16th centuries—Venice won the coast; the Ottomans and Austrians took the interior. Serbs fleeing the Ottoman advance settled in what is now a Serbian stronghold in Croatia. In 1991 Croatia seceded from Serb-dominated Yugoslavia and for the next four years fought the Yugoslav Army and its Croatian Serb allies.

CROATS

Like the Serbs, Croats are Serbo-Croatian-speaking south Slavs. Croats, however, are mostly Roman Catholic and use the Latin alphabet of western Europe; Serbs tend to be Orthodox Christians who use the Cyrillic alphabet of eastern Europe. These differences have perpetually divided the two communities. During World War II, Axis-aligned Croatia persecuted and killed Serbs, among other ethnic groups. The Serb-dominated Resistance retaliated.

The Dayton Peace Accord

The Dayton Peace Accord, signed in December 1995, put an end to more than three years of fighting in Bosnia and Herzegovina. It established two autonomous regions—a Serb republic and a Muslim-Croat federation—separated by a demilitarized zone. A three-time NATO-led troops were continuing to monitor compliance.

BOSNIA & HERZEGOVINA



POPULATION 3,482,000
GDP PER CAPITA $1,720
MILITARY SPENDING $327 million

Serbs and Croats have lived here since the seventh century. At different times early Serbian and Croatian dynasties held most or all of the region, and a 14th-century Bosnian king ruled parts of Serbia and Croatia. The Ottomans arrived in 1463. Competing ethnic claims based on history led to civil war after Bosnia and Herzegovina split from Serbia-Montenegro in 1992. Croatia and Serbia each sent in troops.

MONTENEGRINS

Related to Serbs, Montenegrins still share the religion and language of their partner in Yugoslavia. The two peoples were one until Serbia fell to the Ottomans in the 14th century. After the Battle of Kosovo, some Serbs took refuge in Montenegro, the only Balkan area able to avoid complete domination by the Ottomans. Montenegro remained independent until after World War I, fostering a sense of separate identity.

ALBANIANS

Albanians believe themselves to be the last pure descendants of the Illyrians, the region's inhabitants before the arrival of the Slavs. When Albania's borders were drawn in 1913, nearly half the ethnic Albanians were left outside—most notably in the Serbian province of Kosovo. In 1991 and 1992, with the Albanian economy in crisis, many left the country for Italy and Greece. During the recent war in Kosovo hundreds of thousands of ethnic Albanians fled to Albania, Macedonia, Montenegro, and Bosnia and Herzegovina.

BOSNIACS

Bosnia's Muslims, or Bosniacs, trace their ancestry to Christian Slavs who converted to Islam under the Ottomans, thus gaining tax and landholding advantages. Serbs and Croats each have claimed this group and its territory as historically their own. To end that rivalry, socialist Yugoslavia recognized Bosniacs as a separate people in 1969. Today they make up an estimated 38 percent of Bosnia and Herzegovina's population; Serbs make up 40 percent, Croats 22 percent.

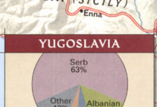
ALBANIA



POPULATION 3,365,000
GDP PER CAPITA $1,490
MILITARY SPENDING $60 million

Once part of the Roman province of Illyricum, Albania was ruled by the Byzantines, Bulgarians, Venetians, and Serbs, among others, before the 14th-century Ottoman invasion. Many people had converted to Islam by the time Albania became independent in 1912. Now one of Europe's poorest countries, it is struggling to recover from four decades of hard-line communism and economic and cultural isolation.

YUGOSLAVIA



POPULATION 11,207,000
GDP PER CAPITA $2,300
MILITARY SPENDING $911 million

A new constitution after World War II created a federation of six republics: Bosnia and Herzegovina, Croatia, Macedonia, Montenegro, Serbia, and Slovenia. Serbia gained two autonomous provinces: Kosovo, with an ethnic Albanian majority, and Vojvodina, with a large Hungarian minority. Today only Serbia and Montenegro remain in the federation. As of press time Montenegro was moving toward greater independence.

SERBS

In the sixth and seventh centuries Serbian Slavs moved into what is now Serbia, Macedonia, Croatia, and Bosnia and Herzegovina. Saints Cyril and Methodius converted them to Orthodox Christianity in the mid-800s. Founded in the 12th century, the kingdom of Serbia seized Albania, Macedonia, and parts of Bosnia, Bulgaria, and Greece. In 1389 the Ottomans defeated the Serbs at Kosovo. Modern efforts to expand Serbia aim at recapturing many early Serbian territories.

Conflict in Kosovo

Hostilities broke out in Kosovo in 1998. Ethnic Albanian Muslims, who made up 90 percent of the population, were fighting for an independent state. Serbs, who consider Kosovo the cradle of their Orthodox Christian Church and their culture, were fighting to keep the province part of Serbia. NATO air strikes won an agreement to end the war in 1999, but reprisals continue despite the presence of an international peacekeeping force.

MACEDONIANS

Two-thirds of the Macedonian population are Orthodox Christian Slavs who speak a language they call Macedonian. Critics, however, say that this ethnolinguistic group was created by the government of communist Yugoslavia. Greece sees the residents of its portion of ancient Macedonia as Greek. Bulgaria sees the residents of its portion as Bulgarian; until recently it claimed that residents of the former Yugoslav republic were ethnically Bulgarian and that the Macedonian language was a Bulgarian dialect.

GREEKS

Ninety-eight percent of Greece's population is Orthodox Christian. Their cultural identity is securely rooted in a history that is 3,000 years old and a language that is not greatly different from what was spoken in ancient Athens. A small number of Albanians, Pomaks, and Turks live as assimilated minorities in Greece; Albania and Turkey are the only neighboring countries with significant Greek communities.

Map Legend

- Limited-access highway
- Road
- Road under construction
- Canal
- Passenger railroad
- International airport
- Air or ground conflict, 1991-99
- Pass
- Ruin
- Tunnel
- Swamp

No predominant ethnic group

This map features ethnic groups that make up more than 50 percent of the population in their region. Not included are minorities such as Gypsies (Roma), Jews, and Vlachs.

Conic Projection
SCALE 1:2,850,000 or 1 INCH = 45 MILES
STATUTE MILES 0 25 50 75 100
KILOMETERS 0 25 50 100

Geographic Equivalents

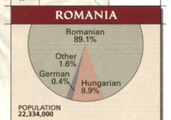
Akra, Akrotíri	cape	Mal	mountain, range
Alpúd	pluin	Montjí	mountains
Blato	lake	Non	cape, point
Bogazi	strait	Oros	mountain
Erero	lake	Ormos	bay
Gjiri	bay	Ostrov	island
Golfo	gulf	Otoci, Otok	islands, island
Göl	lake	Ozero	lake
Gora	mountain	Planina	mountain, plateau
Guri	mountain, ridge	Plato	plateau
Jezero	lake	Rt	cape, point
Kepi	cape, point	See	lake
Kólpos	gulf	Stenón	channel, strait
Körlezi	bay	Yazovir	reservoir
Lacul	lake	Zaliv	bay, gulf
Limni	lake		

Ethnic population estimates vary.

ROMANIANS

"Latins in a sea of Slavs" is how Romanians describe themselves. Their Roman heritage gave them the only major Romance language in eastern Europe. Ethnic minorities in their midst include Hungarians living in Transylvania, a 1996 Romania-Hungary treaty eased tensions in the former Hungarian territory. Germans came into Transylvania under the Magyars and the Austro-Hungarian Empire; many left at the end of World War II and after the fall of communism in 1989.

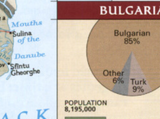
ROMANIA



POPULATION 22,334,000
GDP PER CAPITA $4,050
MILITARY SPENDING $650 million

In A.D. 106 Romans conquered the indigenous Dacians and created the province of Dacia, which occupied the area of modern Romania. Between 271 and the tenth century a series of migrating tribes invaded the region. Finally the Magyars moved into Transylvania, and Moldavia and Walachia became feudal states. After more than three centuries of Ottoman rule, Moldavia and Walachia joined to create Romania. Disputed during the period of the World Wars, Transylvania has ended up as part of Romania.

BULGARIA



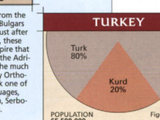
POPULATION 8,195,000
GDP PER CAPITA $4,100
MILITARY SPENDING $227 million

Bulgarians and Byzantines vied for control here until Ottomans took over in 1453. As the Ottoman Empire faded, a Bulgarian state emerged in 1878, gaining full independence in 1908. It did not include the former Bulgarian territories of Macedonia or Thrace, however, and Bulgaria tried unsuccessfully for decades to regain them. In the interest of Balkan stability Bulgaria recognized all the Slavic countries seceding from Yugoslavia in the early 1990s, including Macedonia, but has not become involved in their civil strife.

BULGARIANS

A predominantly Turkic tribe from the lower Volga River region, the Bulgars arrived in the seventh century just after the Slavs. Combining cultures, these peoples created a Bulgarian Empire that stretched from the Black Sea to the Adriatic and that gave its name to the much smaller modern country. Mostly Orthodox Christians, Bulgarians speak one of Europe's oldest written languages, which is related to Macedonian, Serbo-Croatian, and Slovenian.

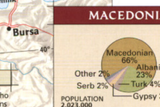
TURKEY



POPULATION 65,599,000
Figures are for all of Turkey.
GDP PER CAPITA $6,600
MILITARY SPENDING $7 billion

Events in former Ottoman territories continue to involve Turkey, once the seat of the empire. In the face of resistance, some half million Turks left Bulgaria for Turkey between 1923 and 1989, creating tension between the two countries. On Cyprus in 1974 Turkey supported minority Turks in a war against Cypriot Greeks, adding to the historical Turkish-Greek rivalry. The fate of minority Muslims in countries that were part of the old Yugoslavia also concerns Turkey, which joined other NATO members and their allies in stopping the recent ethnic war in Bosnia.

MACEDONIA



POPULATION 2,023,000
GDP PER CAPITA $1,050
MILITARY SPENDING $71 million

Named for the homeland of legendary Greek hero Alexander the Great, Macedonia seceded from Yugoslavia in 1991. Like Bulgaria, this region once alternated between Byzantine and Bulgarian rule. Serbs took over briefly before the Ottomans arrived in 1371. After the second Balkan War in 1913 the region was divided among Greece, Bulgaria, and Serbia—each of which has traditionally seen itself as the rightful heir. Albanians also have a claim based on their ancestors' arrival before the Slavs and Bulgars. About a quarter of the country's population is now ethnically Albanian.

POMAKS

Bulgarian descendants of Christians who converted to Islam under the Ottomans are known as Pomaks—a word that roughly means "collaborators." They do not speak Turkish and generally do not mix with the country's ethnic Turks. Bulgaria does not recognize Pomaks as a separate ethnic group and has tried to integrate them forcibly into society. Muslim Slavs in Macedonia are also called Pomaks as well as Torbeshes or Torbeši. Authorities fear they may support ethnic Albanian nationalism.

TURKS

Ninety-eight percent of Turkey's citizens are Muslim, giving the Islamic religion a role in an officially secular state. In addition, more than 90 percent speak Turkish—a language rooted in the Altay Mountains of Asia but written in the Latin alphabet—as their mother tongue. Yet the ebb and flow of empires in Anatolia, from the Hittites and Phrygians to the Greeks and Ottomans, has produced a historically mixed population that is still grappling with what it means to be a Turk.

GREECE



POPULATION 10,707,000
Greece does not recognize ethnic divisions.
GDP PER CAPITA $13,400
MILITARY SPENDING $6 billion

The first state to break away from the Ottomans, Greece won independence in 1830. Relations with Turkey, a fellow NATO member and rival for influence in the Balkans, remain difficult. In one of the region's most contentious issues, Greece believes that the name of the ancient empire of Macedonia should not be applied to a modern country and insists on referring to its northern neighbor as the Former Yugoslav Republic of Macedonia. In the Bosnian war Greece sided with Serbia, which initially supported its stand on Macedonia. Turkey—and the rest of NATO—backed the Bosnian Muslims.

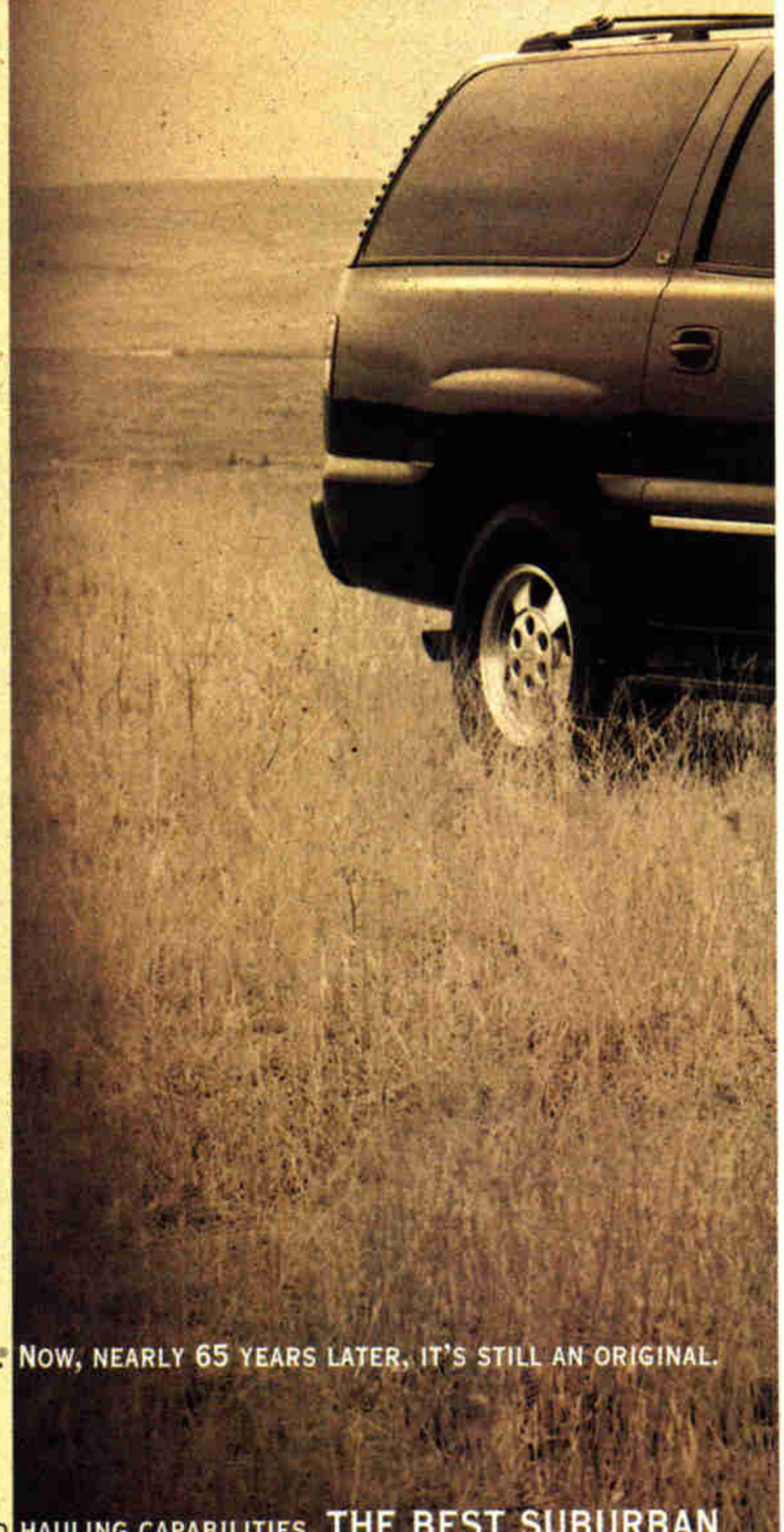
Longitude East 20° of Greenwich

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NATIONAL GEOGRAPHIC

FEBRUARY 2000



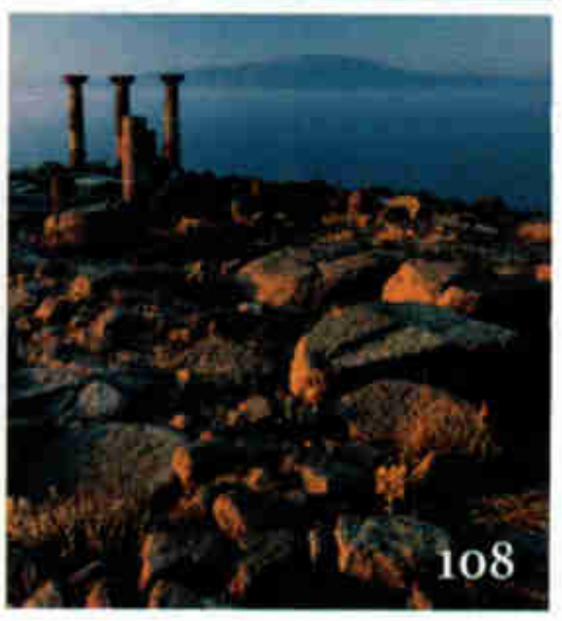












2 **Black Dragon River** *A narrow ribbon of water separates two worlds that could hardly be more different: an impoverished corner of Russia and China's economically energized Heilongjiang Province.*
BY SIMON WINCHESTER PHOTOGRAPHS BY REZA

34 **The Rise of Life on Earth** *Forty-nine million years ago dinosaurs were long extinct and mammals on the ascent. Species of that time have been remarkably preserved in a mine pit at Messel, Germany.*
BY HILLEL J. HOFFMANN PHOTOGRAPHS BY JONATHAN BLAIR

52 **Albanians: A People Undone** *Scattered from the Balkans to the Bronx, Albanians hold fast to what they have left—an impoverished Eastern European homeland and deep ethnic pride.*
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72 **Eyewitness Kosovo** *During the grim months before NATO intervened in Kosovo, a French photographer witnessed the anguish and upheaval of the Balkans' recurring bloodbath.*
ARTICLE AND PHOTOGRAPHS BY ALEXANDRA BOULAT

■ *Double Map Supplement: The Balkans/Refugees*

84 **Central Africa's Orphan Gorillas** *In Congo and Gabon dedicated workers evaded civil war to nurture, socialize, and ultimately release western lowland gorillas back into the wild.*
BY MICHAEL McRAE PHOTOGRAPHS BY MICHAEL NICHOLS

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BY CHUCK STONE PHOTOGRAPHS BY MERIA JOEL CARSTARPHEN

108 **Ancient Greece** *Elegant proportions and riotous color, tragedy and comedy, democracy and slavery: The roots and realities of the Classical Age belie our assumptions in the second of a three-part series.*
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The Cover

Raised in a zoo, a two-year-old orphan gorilla named Tonga learns to live in the wild at the Mpassa Reserve in Gabon. Photograph by Michael Nichols

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NATIONAL GEOGRAPHIC

*On*Assignment

■ ANCIENT GREECE II

In the Field, Strangers Quickly Become Friends

James L. Stanfield spent the better part of two years shooting our series on ancient Greece, the latest in his string of epic assignments ranging from the Mongol empire to the French Revolution. Immersing himself in the subject, the veteran photographer got to know the locals at a café in Agia Paraskevi on the isle of Lesbos. "Jim could have been elected mayor by the time we left because he worked the entire village," says a colleague who joined him there.



TODD GIPSTEIN



PRIIT J. VESILIND, NGS STAFF

■ ALBANIANS

Photographing Refugees From the Inside Out

"I felt very close to these refugees," says Alexandra Boulat, shown climbing atop a barrel in a Macedonian refugee camp to photograph a breadline of Kosovar Albanians. Authorities turned Boulat away from an early makeshift camp to keep her from seeing the dire conditions there. Hiding her cameras, she gained entry by covering her head with a blanket, feigning illness, and pretending to be a refugee.

■ LOWLAND GORILLAS

Making Contact, One Gorilla at a Time

Eye to eye, a lowland gorilla studies writer Michael McRae in the Republic of the Congo's Léfini Faunal Reserve. "When we first met," says McRae, "I crouched in greeting, bowing my head. He licked some sweat from my brow—I was amazed at how gently." A wily gorilla nicknamed Rupert later stole McRae's daypack, containing his notes. Trackers gave chase and recovered the shredded pack and its contents, except for two granola bars and a Swiss army knife.



NGS PHOTOGRAPHER MICHAEL NICHOLS



Andean Mountain Cat *(Oreailurus jacobita)* **Size:** Head and body length, 57-64 cm; tail, 41-48 cm **Weight:** Approx. 4 kg **Habitat:** The high Andes of Peru, Bolivia, Chile and Argentina **Surviving number:** Unknown
Photographed by Jim Sanderson

WILDLIFE AS CANON SEES IT

On a rocky, windswept plateau in northern Chile, an Andean mountain cat pauses to watch and listen. In a vast and desolate environment, its keen hearing readily detects the distant alarm calls of mountain viscachas, rabbit-like rodents sharing this high-altitude terrain. The mountain cat's thick, silvery fur enables it to survive in a harsh climate, but it is also the reason this cat is still illegally hunted. There are only a few documented sightings of the Andean mountain cat in the wild; none exist in captivity. Further studies are necessary to solve the mysteries of this rare and little-known cat of the high Andes. As a global corporation committed to social and environmental concerns, we join in worldwide efforts to promote greater awareness of endangered species for the benefit of future generations.

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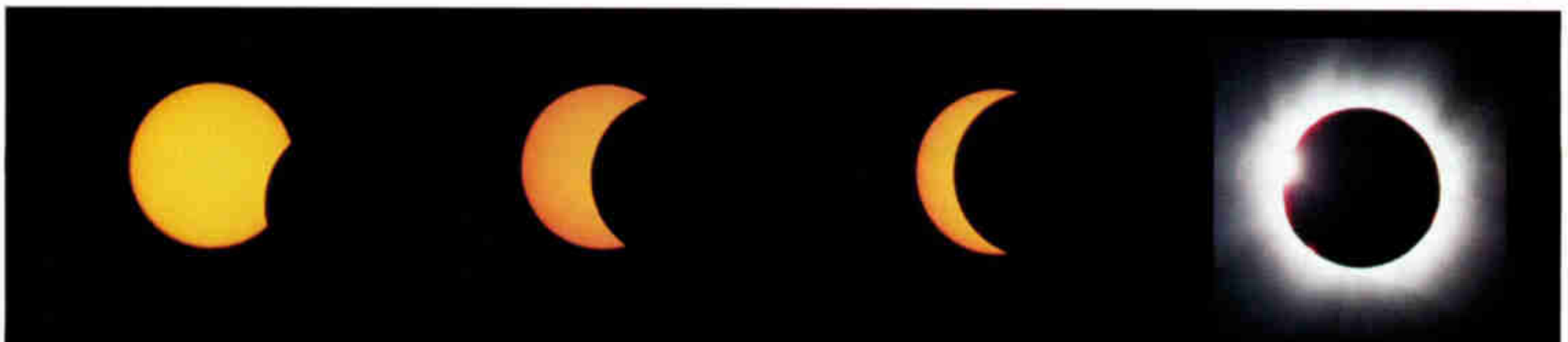
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An Eclipse, From Below and Above

The last total solar eclipse of the millennium held special treasures for astronomers like Jay Pasachoff of Williams College. He observed the August 11, 1999, eclipse from "ground zero": Rîmnicu Vîlcea, Romania, where the moon obscured the sun for two minutes and 23 seconds. His photographs (top) show the gradual approach of darkness, culminating in a view of the red solar prominences and white streamers of the sun's corona, intensified because the sun is near the peak of its 11-year cycle of activity.

From space, cosmonauts in Mir captured this image of the clouds over western Europe, darkened by the moon's shadow (right). The next total solar eclipse will cross over Africa on June 21, 2001.



JAY M. PASACHOFF (TOP); MIR 27 CREW, CNES

Underground Fleet

When the Italian state railway began work on a major junction at Pisa in 1998, archaeologists, knowing ancient ruins existed nearby, made a test dig in the sandy soil. What they found overwhelmed them.

"As we dug deeper and deeper, we began finding ships," says Stefano Bruni of Tuscany's archaeological superintendency. By late last fall Bruni's team had turned up 16 ships dating from the third century B.C. to the sixth century A.D., ranging from 23 feet to nearly 100 feet in length. They also discovered an even earlier breakwater and a pier, part of ancient Pisa's harbor, in use in the fifth century B.C.



GIOVANNI LITTANZI

"It's a great discovery because of the number of ships and their state of preservation," says Bruni. The finds include commercial craft with cargoes of wine, fruit, and olives still in their storage jars as well as this 46-foot-long vessel (left) that perhaps served a military purpose. The most poignant discovery: the skeleton of a man, probably a sailor, and a dog, most likely his pet, near a cargo ship.

Bruni's team will preserve eight of the craft for further study. Meanwhile, he continues to dig in hopes of finding more.

VIAGRA *is widely used*

This is one fact about VIAGRA *that most everyone is familiar with. Millions of men with erectile dysfunction* (ED) *have enjoyed more satisfying sex lives because of* VIAGRA. *But here are 7 more facts about* VIAGRA *that may be useful to you.*

1 VIAGRA is effective in men with all types of ED

VIAGRA improves erections in up to 4 of 5 men who take it compared with 1 out of 4 for sugar tablets, regardless of how severe their ED is, how long they have had ED, what caused it, or even how old they are. If you're not satisfied with your sex life due to poor erections during recent months, talk to your doctor. You may be suffering from mild ED—and VIAGRA can help.

2 VIAGRA has been extensively studied

In fact, in clinical trials of more than 3000 patients, VIAGRA was proven to be effective while having an excellent safety profile. And you can feel confident knowing that more than 250,000 doctors have written more than 14 million prescriptions for VIAGRA, as of November 1999, for more than 5 million patients.*

3 VIAGRA works when you need it

VIAGRA begins working in as fast as 30 minutes, but it can be taken as much as 4 hours in advance of sexual activity. A general rule is to take VIAGRA about 1 hour before sex. That way, you can use the time to get intimate with your partner. Be spontaneous. Be playful. Have fun.

4 VIAGRA only works when you are sexually stimulated

When a man is sexually stimulated, the arteries in the penis relax, and more blood flows into the penis, creating an erection. VIAGRA works by helping the blood vessels in the penis to relax, thereby increasing blood flow to the penis.

With VIAGRA, you must be sexually aroused (physically, visually, etc) to get an erection. If you take VIAGRA and are not sexually stimulated in any way, nothing will happen.

VIAGRA is not a hormone, an herbal supplement, or an aphrodisiac. VIAGRA is a prescription medication that can improve the erectile function of most men with erection problems. So with VIAGRA, a touch or a glance from your partner can once again lead to something more.

Seven more reasons to feel (plus one that everyone already knows)

*Data on file. Pfizer Inc, New York, NY.

For more information, call 1-888-4VIAGRA or visit www.viagra.com.

Please see patient summary of information for VIAGRA (25-*mg*, 50-*mg*, 100-*mg*) *tablets on the following page.*

VIAGRA comes in 3 dosing strengths

With 3 different doses (25 mg, 50 mg, 100 mg), VIAGRA has a strength that works best for you. Like many medications, your doctor may have to adjust your initial VIAGRA dose if it doesn't produce the desired results or you're bothered by side effects. Do not take more VIAGRA than your doctor prescribes, and do not take VIAGRA more than once a day.

VIAGRA works best on an empty stomach

But if dinner is in your plans, you can still take VIAGRA. However, taking VIAGRA after a high-fat meal (such as a cheeseburger and french fries) may cause the medication to take a little longer to start working.

VIAGRA is well tolerated

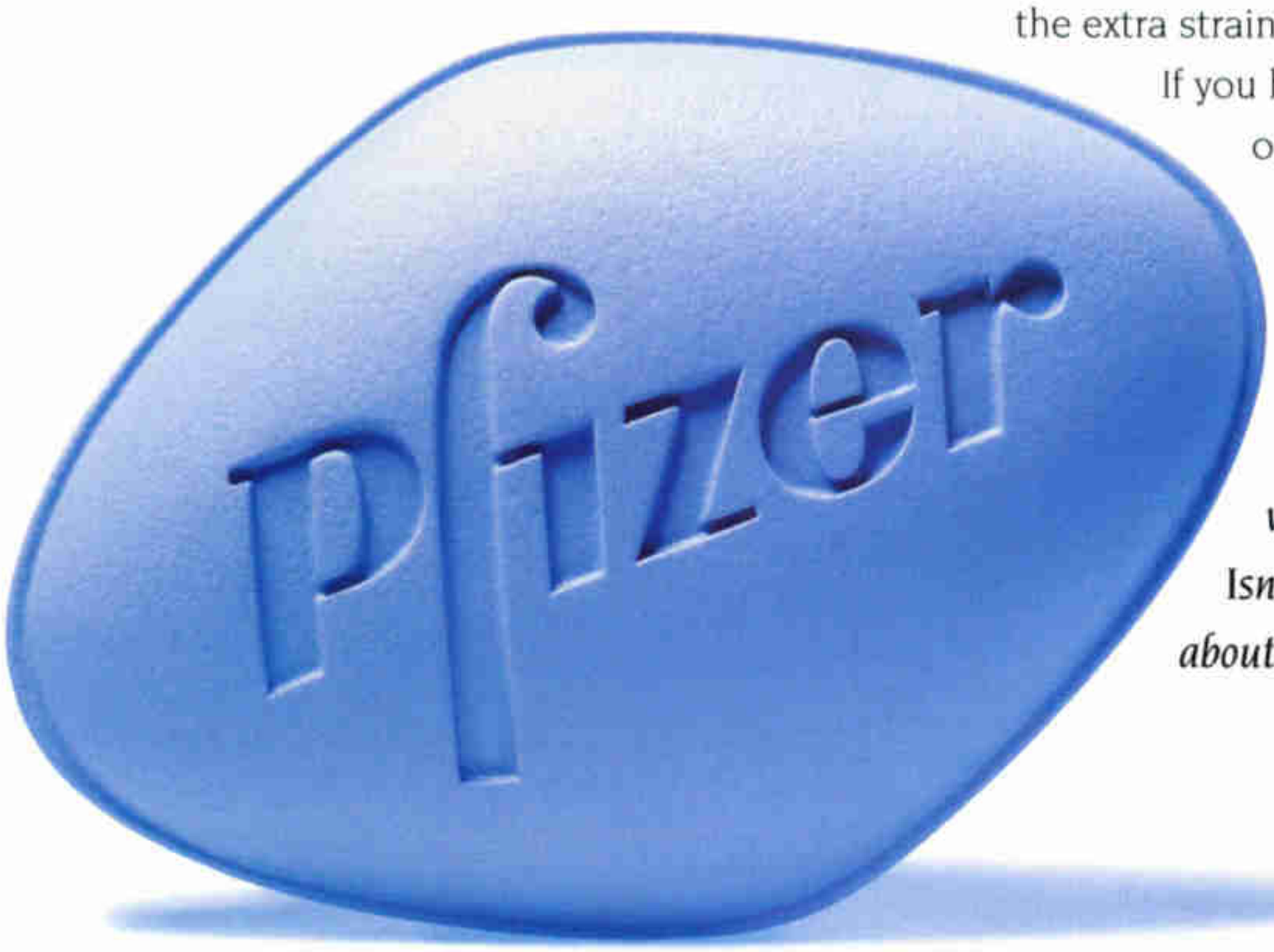
Like all medications, VIAGRA can cause some side effects. These are usually mild and don't last longer than a few hours. In clinical trials, the vast majority of these side effects did not cause patients to stop taking VIAGRA. Some of these side effects are more likely to occur with higher doses of VIAGRA. With VIAGRA, the most common side effects are headache, facial flushing, and upset stomach. VIAGRA may also briefly cause bluish vision, sensitivity to light, or blurred vision. In the rare event of an erection lasting more than 4 hours, seek immediate medical help.

VIAGRA is not for everyone. If you're a man who uses nitrate drugs, never take VIAGRA—your blood pressure could suddenly drop to an unsafe level.

Be sure to ask your doctor if your heart is healthy enough to handle the extra strain of sexual activity.

If you have chest pains, dizziness, or nausea during sex, stop and immediately tell your doctor.

good about VIAGRA



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(sildenafil citrate) tablets

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Love life again.



PATIENT SUMMARY OF INFORMATION ABOUT

VIAGRA®
(sildenafil citrate) tablets

This summary contains important information about VIAGRA®.
It is not meant to take the place of your doctor's instructions. Read this information carefully before you start taking VIAGRA. Ask your doctor or pharmacist if you do not understand any of this information or if you want to know more about VIAGRA.

This medicine can help many men when it is used as prescribed by their doctors. However, VIAGRA is not for everyone. It is intended for use only by men who have a condition called erectile dysfunction. **VIAGRA must never be used by men who are taking medicines that contain nitrates of any kind, at any time. This includes nitroglycerin. If you take VIAGRA with any nitrate medicine your blood pressure could suddenly drop to an unsafe or life threatening level.**

What Is VIAGRA?

VIAGRA is a pill used to treat erectile dysfunction (impotence) in men. It can help many men who have erectile dysfunction get and keep an erection when they become sexually excited (stimulated).

You will not get an erection just by taking this medicine. VIAGRA helps a man with erectile dysfunction get an erection only when he is sexually excited.

How Sex Affects the Body

When a man is sexually excited, the penis rapidly fills with more blood than usual. The penis then expands and hardens. This is called an erection. After the man is done having sex, this extra blood flows out of the penis back into the body. The erection goes away. If an erection lasts for a long time (more than 6 hours), it can permanently damage your penis. You should call a doctor immediately if you ever have a prolonged erection that lasts more than 4 hours.

Some conditions and medicines interfere with this natural erection process. The penis cannot fill with enough blood. The man cannot have an erection. This is called erectile dysfunction if it becomes a frequent problem.

During sex, your heart works harder. Therefore sexual activity may not be advisable for people who have heart problems. Before you start any treatment for erectile dysfunction, ask your doctor if your heart is healthy enough to handle the extra strain of having sex. If you have chest pains, dizziness or nausea during sex, stop having sex and immediately tell your doctor you have had this problem.

How VIAGRA Works

VIAGRA enables many men with erectile dysfunction to respond to sexual stimulation. When a man is sexually excited, VIAGRA helps the penis fill with enough blood to cause an erection. After sex is over, the erection goes away.

VIAGRA Is Not for Everyone

As noted above (*How Sex Affects the Body*), ask your doctor if your heart is healthy enough for sexual activity.

If you take any medicines that contain nitrates–either regularly or as needed–you should never take VIAGRA. If you take VIAGRA with any nitrate medicine or recreational drug containing nitrates, your blood pressure could suddenly drop to an unsafe level. You could get dizzy, faint, or even have a heart attack or stroke. Nitrates are found in many prescription medicines that are used to treat angina (chest pain due to heart disease) such as:

- nitroglycerin (sprays, ointments, skin patches or pastes, and tablets that are swallowed or dissolved in the mouth)
- isosorbide mononitrate and isosorbide dinitrate (tablets that are swallowed, chewed, or dissolved in the mouth)

Nitrates are also found in recreational drugs such as amyl nitrate or nitrite ("poppers"). If you are not sure if any of your medicines contain nitrates, or if you do not understand what nitrates are, ask your doctor or pharmacist.

VIAGRA is only for patients with erectile dysfunction. VIAGRA is not for newborns, children, or women. Do not let anyone else take your VIAGRA. VIAGRA must be used only under a doctor's supervision.

What VIAGRA Does Not Do

- VIAGRA does not cure erectile dysfunction. It is a treatment for erectile dysfunction.
- VIAGRA does not protect you or your partner from getting sexually transmitted diseases, including HIV–the virus that causes AIDS.
- VIAGRA is not a hormone or an aphrodisiac.

What To Tell Your Doctor Before You Begin VIAGRA

Only your doctor can decide if VIAGRA is right for you. VIAGRA can cause mild, temporary lowering of your blood pressure. You will need to have a thorough medical exam to diagnose your erectile dysfunction and to find out if you can safely take VIAGRA alone or with your other medicines. Your doctor should determine if your heart is healthy enough to handle the extra strain of having sex.

Be sure to tell your doctor if you:

- have ever had any heart problems (e.g., angina, chest pain, heart failure, irregular heart beats, or heart attack)
- have ever had a stroke
- have low or high blood pressure
- have a rare inherited eye disease called retinitis pigmentosa
- have ever had any kidney problems
- have ever had any liver problems
- have ever had any blood problems, including sickle cell anemia or leukemia
- are allergic to sildenafil or any of the other ingredients of VIAGRA tablets
- have a deformed penis, Peyronie's disease, or ever had an erection that lasted more than 4 hours
- have stomach ulcers or any types of bleeding problems
- are taking any other medicines

VIAGRA and Other Medicines

Some medicines can change the way VIAGRA works. Tell your doctor about **any medicines** you are taking. Do not start or stop taking any medicines before checking with your doctor or pharmacist. This includes prescription and nonprescription medicines or remedies. Remember, VIAGRA should never be used with medicines that contain nitrates (see *VIAGRA Is Not for Everyone*). If you are taking a protease inhibitor, your dose may be adjusted (please see *Finding the Right Dose for You.*) VIAGRA should not be used with any other medical treatments that cause erections. These treatments include pills, medicines that are injected or inserted into the penis, implants or vacuum pumps.

Finding the Right Dose for You

VIAGRA comes in different doses (25 mg, 50 mg and 100 mg). If you do not get the results you expect, talk with your doctor. You and your doctor can determine the dose that works best for you.

- Do not take more VIAGRA than your doctor prescribes.
- If you think you need a larger dose of VIAGRA, check with your doctor.
- VIAGRA should not be taken more than once a day.

If you are older than age 65, or have serious liver or kidney problems, your doctor may start you at the lowest dose (25 mg) of VIAGRA. If you are taking protease inhibitors, such as for the treatment of HIV, your doctor may recommend a 25 mg dose and may limit you to a maximum single dose of 25 mg of VIAGRA in a 48 hour period.

How To Take VIAGRA

Take VIAGRA about one hour before you plan to have sex. Beginning in about 30 minutes and for up to 4 hours, VIAGRA can help you get an erection if you are sexually excited. If you take VIAGRA after a high-fat meal (such as a cheeseburger and french fries), the medicine may take a little longer to start working. VIAGRA can help you get an erection when you are sexually excited. You will not get an erection just by taking the pill.

Possible Side Effects

Like all medicines, VIAGRA can cause some side effects. These effects are usually mild to moderate and usually don't last longer than a few hours. Some of these side effects are more likely to occur with higher doses. The most common side effects of VIAGRA are headache, flushing of the face, and upset stomach. Less common side effects that may occur are temporary changes in color vision (such as trouble telling the difference between blue and green objects or having a blue color tinge to them), eyes being more sensitive to light, or blurred vision.

In rare instances, men have reported an erection that lasts many hours. You should call a doctor immediately if you ever have an erection that lasts more than 4 hours. If not treated right away, permanent damage to your penis could occur (see *How Sex Affects the Body*).

Heart attack, stroke, irregular heart beats, and death have been reported rarely in men taking VIAGRA. Most, but not all, of these men had heart problems before taking this medicine. It is not possible to determine whether these events were directly related to VIAGRA.

VIAGRA may cause other side effects besides those listed on this sheet. If you want more information or develop any side effects or symptoms you are concerned about, call your doctor.

Accidental Overdose

In case of accidental overdose, call your doctor right away.

Storing VIAGRA

Keep VIAGRA out of the reach of children. Keep VIAGRA in its original container. Store at room temperature, 59°-86°F (15°-30°C).

For More Information on VIAGRA

VIAGRA is a prescription medicine used to treat erectile dysfunction. Only your doctor can decide if it is right for you. This sheet is only a summary. If you have any questions or want more information about VIAGRA, talk with your doctor or pharmacist, visit www.viagra.com, or call 1-888-4VIAGRA.

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Homage to Leonardo

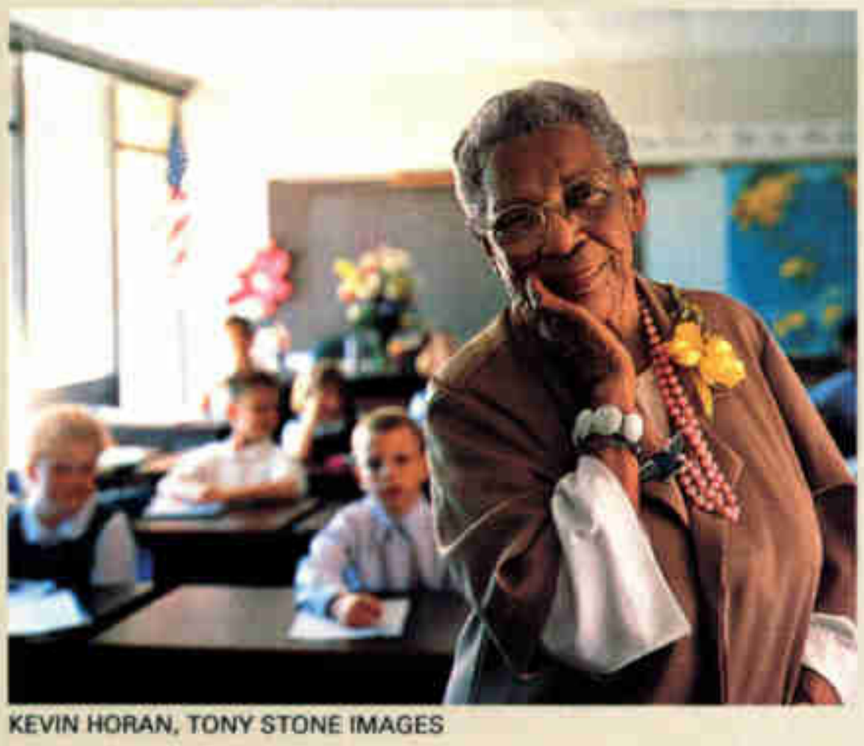


WALTER GARSCHAGEN

Some things just take a while.

In 1482 Leonardo da Vinci began work on an equestrian statue for the Duke of Milan. But a French invasion thwarted his plan, and the statue was never cast. Retired airline pilot and art collector Charles C. Dent read a September 1977 GEOGRAPHIC article about Leonardo and had an epiphany: Why not create a statue of a horse and place it in Milan as a tribute to Leonardo?

Dent died in 1994, but his dream became a reality last September, 500 years to the day after Leonardo's clay model was used for target practice by the French invaders. Seen here being assembled, the 24-foot-high bronze horse, designed by sculptor Nina Akamu with the aid of Leonardo's drawings, was unveiled in a new cultural park, and the city celebrated with a concert at La Scala opera house.

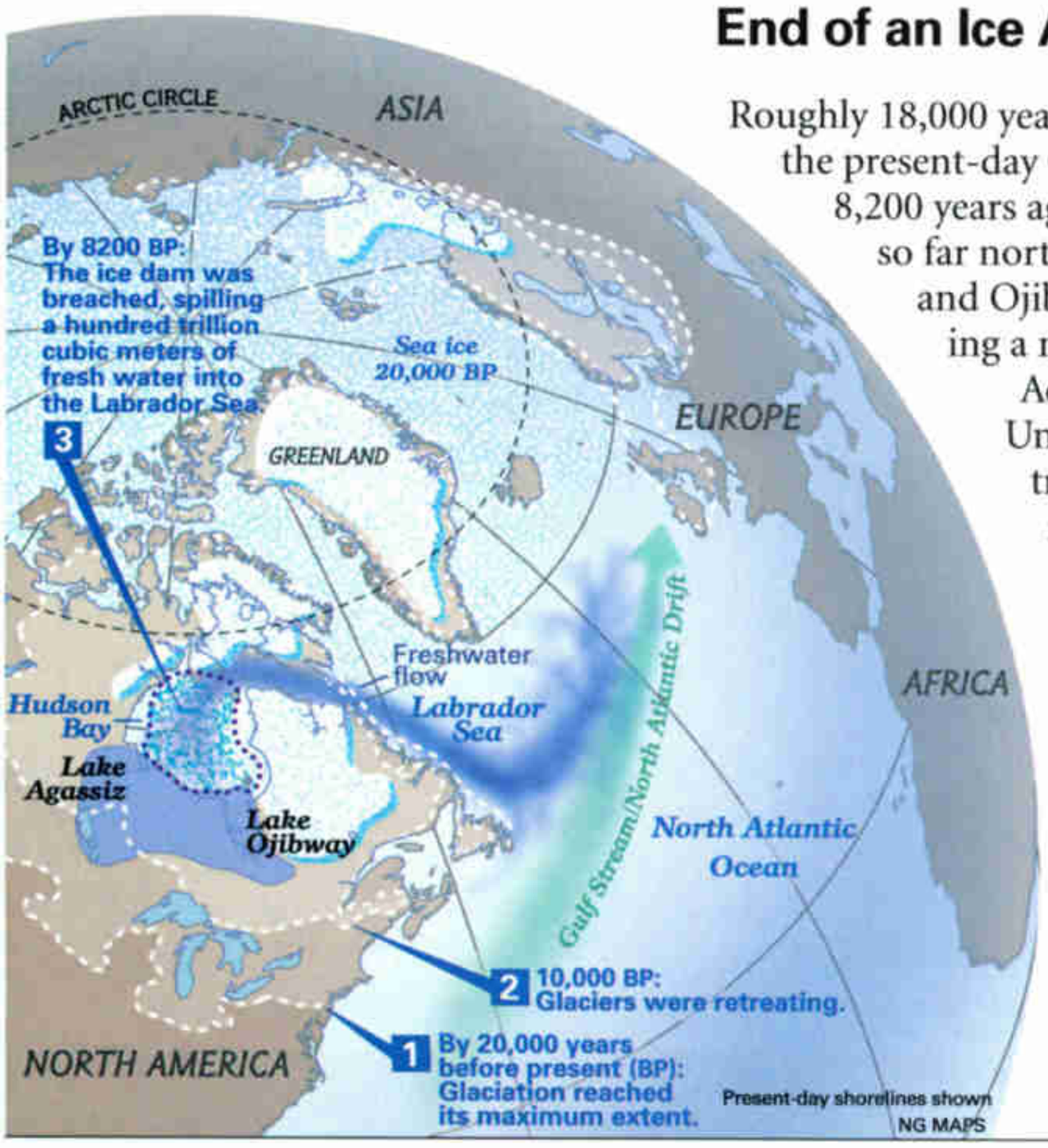


KEVIN HORAN, TONY STONE IMAGES

Surpassing the Century Mark

With 107 years under her belt, Ora Glass of Omaha, Nebraska, shown visiting a school in 1995, belongs to a growing group: In the most recent census 37,306 Americans said they were 100 years old or older. Victoria Velkoff of the U.S. Census Bureau says the number is probably lower because of errors in filling out forms, overestimation of age, and a lack of birth certificates among the very elderly. Velkoff puts the true count at about 28,000, still almost twice the estimated 15,000 in 1980, and expects the number to double by this year.

End of an Ice Age, Onset of a Cold Spell



Roughly 18,000 years ago the ice sheet that extended south of the present-day Great Lakes began to recede. By about 8,200 years ago the leading edge of the ice had moved so far north that an ice dam blocking Lakes Agassiz and Ojibway in Canada melted and collapsed, loosing a massive flood.

According to a study led by Don Barber of the University of Colorado, more than a hundred trillion cubic meters of frigid water poured into the Labrador Sea and on into the Atlantic. The result: a shift in the warm Gulf Stream so great that average air temperatures fell as much as 15°F in Greenland and 6°F in continental Europe and stayed down for more than two centuries.

Barber and his co-workers identified a reddish layer of sediment that stretches 800 miles from northern Hudson Bay into the Atlantic. Careful dating of the distinctive sediment layer "put it spot on the onset of the cold spell," he says.

TEXT BY BORIS WEINTRAUB

Forum

"Unveiling the Universe" in the October issue created a stir among our readers on planet Earth. "All my life I have been fascinated by the incredible complexity and vastness of the universe, and I have never before read such a clear, complete, in-depth yet understandable article," said one. "You have created the perfect pairing of education and beauty," said another.

Unveiling the Universe

I realize that even after reading many articles on the big bang, this is the one that opened my mind. Not only were matter and energy created but also space. And space is still expanding. Thanks for the enlightenment.

FRED YULGA
Marathon, Wisconsin

The explorations of astronomers and scientists vying to unveil the universe are exorbitantly expensive and wrongly prioritized. The billions of dollars squandered on outer space research should be spent on salvaging Earth's endangered species and imperiled ecosystems.

BRIEN COMERFORD
Glenview, Illinois

An excellent point you make in your article is that we are gradually finding out that our circumstances are not special in time or place. Geologists long ago recognized this with the principle of uniformitarianism, which argues that the present is the key to the past. Perhaps a uniformitarianism of space is needed to boost our understanding of the larger scale. The Earth is the key to distant space, not because we are special but because we are not.

GUY McGRANE
Millers Creek, North Carolina

I found your article both intriguing and illuminating in its description of the orderly and perfectly balanced design of the universe. I also found it to be compelling evidence that there is a designer.

BARRY N. VOORN
Orland Park, Illinois

Milky Way Map

As I looked at the Milky Way and envisioned it spiraling through space, I felt strangely at home. It looks just like the hurricanes that spiraled across the Gulf of Mexico on the way toward my childhood home of New Orleans.

EDITH LOVEGREN
Westminster, Colorado

Would it be possible to send a copy of the Milky Way map to every self-absorbed politician, sports star, televangelist, and entertainment figure in this country? Galileo would be proud of you for this extraordinary document.

ROBERT D. GARRISON
Waunakee, Wisconsin

Why is there no hint of the Sagittarius dwarf galaxy, which is the closest known galaxy to our solar system? It is a major 1994 discovery that I think would interest most readers.

MARK BURTON
Regina, Saskatchewan

If you depict the Milky Way with the sun's neighborhood in the foreground, as we did, gases, dust, stars, and nebulae obstruct the view of the Sagittarius dwarf on the opposite side of the galaxy.

Secrets of the Gene

As I read the last two paragraphs of your article, I wondered when NATIONAL GEOGRAPHIC would receive notice that the magazine has been banned from school libraries in Kansas for promoting this "theory" of biology and evolution.

M. DANIEL SLOAN
Seattle, Washington

Your article is correct in crediting Watson and Crick with ultimately determining the structure of DNA but overlooks the important contributions of other scientists. X-ray diffractometry studies conducted by Rosalind Franklin on fibers of DNA prepared by Maurice Wilkins suggested the helical structure and dimensions of the DNA macromolecule. Watson and Crick learned informally of this data before it was published in 1953 and promptly unravelled the geometry of the double helix.

BRIAN JONES
Norwich, Vermont

A hundred years ago Lord Kelvin, one of the most eminent physicists in the world, was advising students not to make their careers in physics. Physical research, he said, had about come to an end, and nothing remained but to fill in a few missing details. Yet both relativity and quantum mechanics were then just about to revolutionize the field. The mapping of the human genome is surely one of the most exciting works in progress anywhere. Still, when Professor Sulston says, "All the information needed to make a human being is written in our DNA," one wonders how that line will play a hundred years from now. Better to leave the question of what is "needed to make a human being" to philosophers.

CARL RIECK
Sarasota, Florida

Your comparison of the genome to a piano is one of the most intuitive and easy-to-grasp analogies I've come across. As a geneticist I am often at a loss to explain to my nonscientist friends what I do; from now on I'm going to tell them I'm a genetic pianist.

JEFF LEE
New York, New York

GOOD HANDS.

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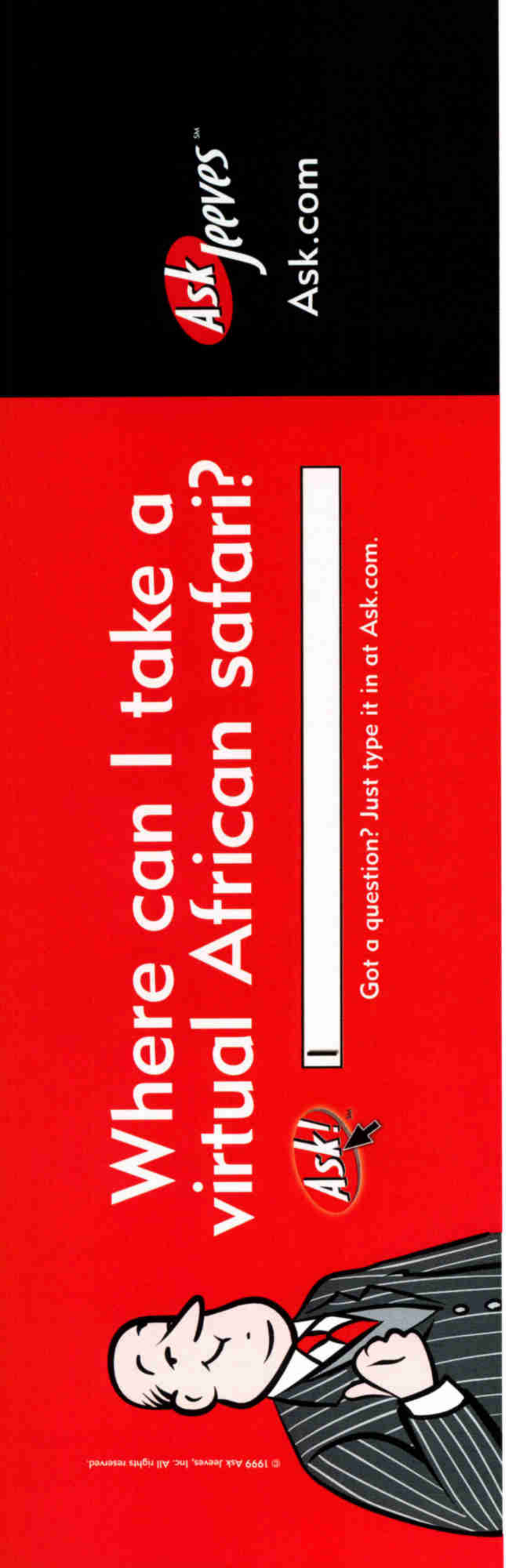
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Cuba's Colonial Treasure

Congratulations on your striking photographs of Trinidad, Cuba. I was particularly thrilled because I owe my existence to similar photos from an earlier era. My father, an artist from California, traveled to Trinidad after being inspired by photographs of the town in your January 1947 issue. There he met and soon married my mother, whose family has lived in the region for centuries. I have often wondered how many bicultural children owe their lives to the wanderlust triggered by NATIONAL GEOGRAPHIC!

MARGARITA ENGLE
Clovis, California

Mystery on Everest

I have been an avid reader of your magazine since I was a little boy. Never has a photograph affected me more than the one of George Mallory's marble-white foot protruding from the rocks (pages 112-13). Seeing his body is like taking a time machine back to 1924 and briefly sharing his painful death.

HAL HOFFENBERG
La Mirada, California

When I was young, the name Mallory was on everyone's lips. We all wanted to believe that he had in fact reached the top of Everest and the accident that must have befallen him happened on the way down. It was not until the '70s that the difficulty of the Second Step became widely known and hope gradually ceased for the success of the climb. He must have reached close enough to know the Step was insurmountable and turned back immediately. Then imagine how easily that fatal second's inattention to the task at hand could have happened. Mercifully, his knowledge that his dream was now forever beyond his reach was brief. It was right to take just the sufficient artifacts and data to solve the mystery and then to leave Mallory there as part of the soul of the mountain, with his achievement intact.

JOHN SANKEY
Gloucester, Ontario

The Last Dive

Your story sent me on an absolute thrill ride of terror. As a passenger on the *I-52* Japanese sub that was sunk by American bombers, I plunged to the depths of the Atlantic, each second agonizing over my impending doom. Then my lunch break ended. Tidwell and his investors failed to find their riches but enriched me greatly in experiencing the tragic sorrow that results from war.

FRED H. MARSHALL
Indianapolis, Indiana

The search for *I-52* did not even have a pretense of research, scientific, or humanitarian purpose. Its sole aim was avarice, a human characteristic with which the world is oversupplied.

CHRIS SKILLERN
San Diego, California

You stated that simple uranium oxide will not emit radiation unless it is enriched in a fusion reactor.



This is not true. All forms of uranium compounds, and the element itself, emit radiation.

MICHAEL SHORT
Laguna Hills, California

True, but the unprocessed uranium oxide on the sub would have emitted harmless alpha radiation.

The story of the U.S.S. *Bogue* and the sinking of the *I-52* was a personal revelation. My brother John (Buddy) L. Markham, Jr., was a U.S.S. *Bogue* crew member. He told of his ship in the summer of 1944 sinking a Japanese submarine in the Atlantic that was hauling war matériel to Germany. He brought home a piece of rubber that he said came from the sub's cargo. Buddy died in 1946, and since then I have wondered about what he told me. Your article has meaningfully answered all my wonderings.

JAMES D. MARKHAM
Columbus, Ohio

You can imagine my surprise when I started reading your article and saw my father's name, Lt. Kurt Lange, commander of the *U-530*. After the war he never told us much about the *U-530*. Here I find a new piece of the puzzle and can only guess that this was the same mission that ended when his sub was rammed during an attack in the Caribbean Sea and the bow was completely taken off. My father and his crew managed to take the sub back to France. I still have pictures of the damaged boat.

ACHIM LANGE
Diessen, Germany

Millennium Moments

While reading your latest issue, I came across the quotation by Neil Armstrong upon stepping onto the surface of the moon in 1969. I still have a recording of the audio link made that day. You can clearly hear the words were: "That's one small step for man, one giant leap for mankind." Note that there is no "a" prior to "man."

GUY M. MARICICH
Pensacola, Florida

For our story in 1969 covering the moon landing our researchers listened to the recording over and over before finally deciding to quote him as saying "a man." We followed that precedent in this story.

Letters for Forum should be sent to National Geographic Magazine, PO Box 98198, Washington, DC 20090-8198, or by fax to 202-828-5460, or via the Internet to ngsforum@nationalgeographic.com. Include name, address, and daytime telephone. Letters may be edited for clarity and space.

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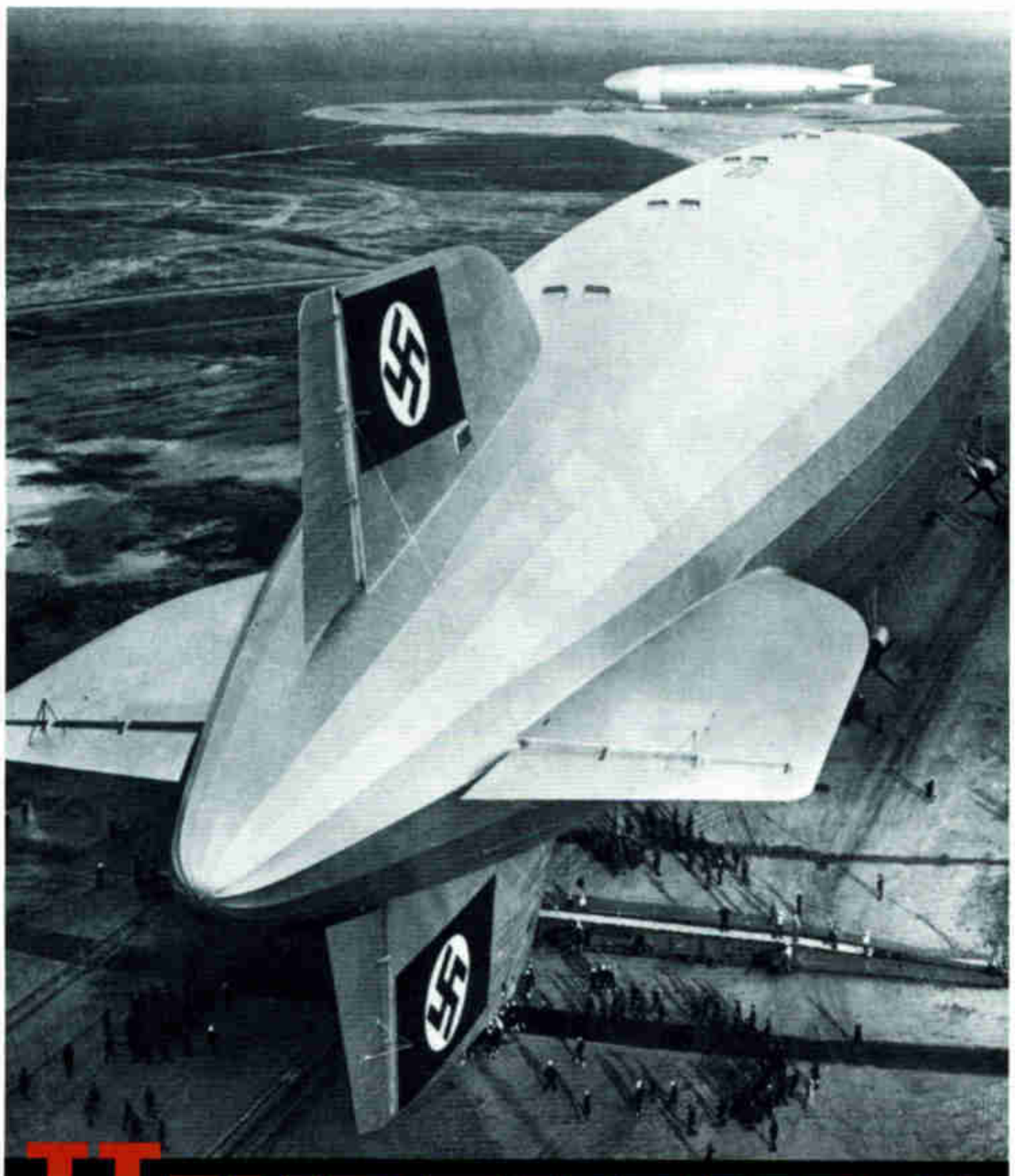
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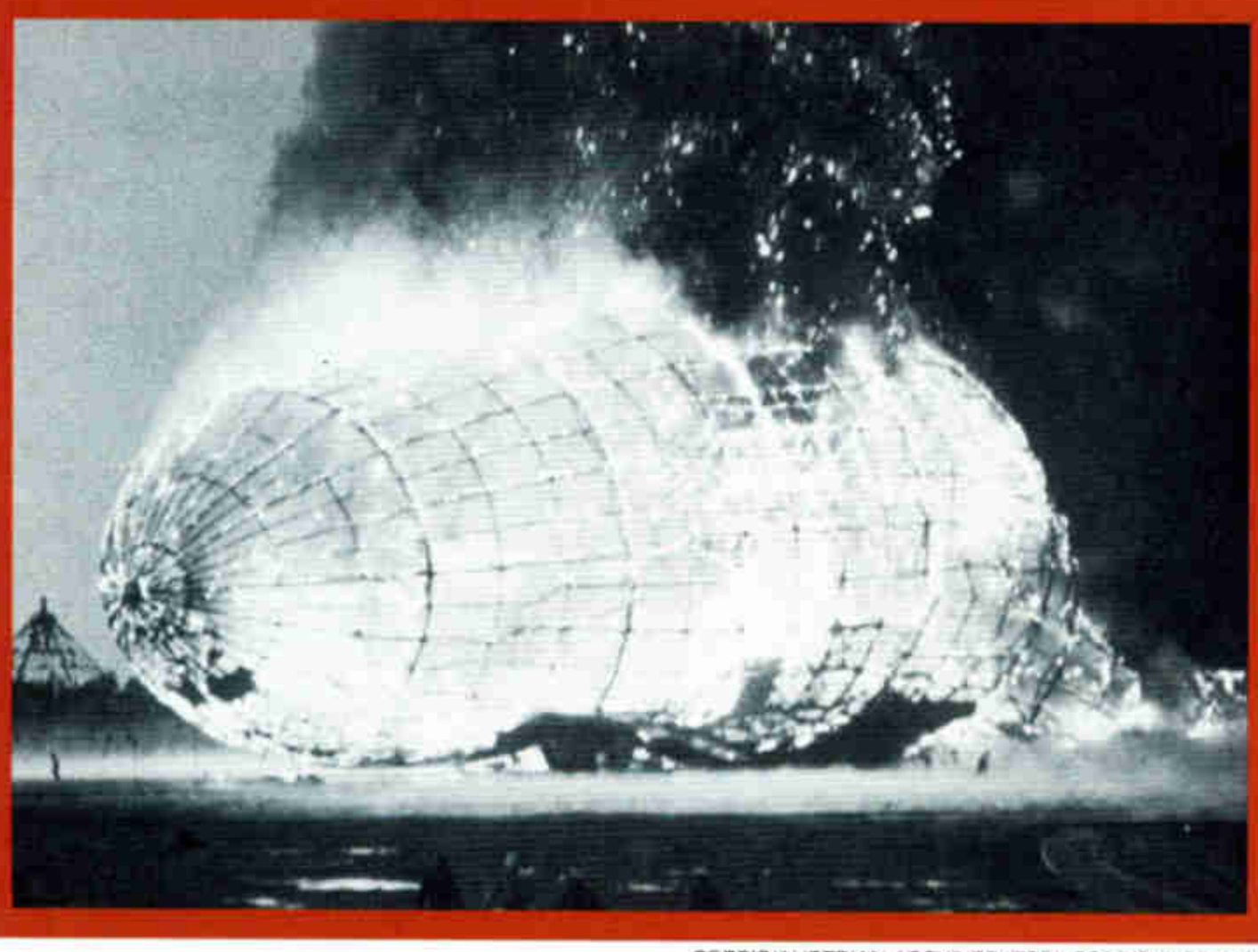
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HINDENBURG



■ EXPLORER, FEBRUARY 6

A name synonymous with disaster, the *Hindenburg* (left) was the world's most luxurious airship and a symbol of German might. On May 6, 1937, as it attempted to land in Lakehurst, New Jersey, the 804-foot-long dirigible—filled with hydrogen gas—burst into flames, killing 35 of the 97 people on board.

An EXPLORER segment airing this month and available on home video in March documents hydrogen expert Addison Bain's recent inquiry into the tragedy. The former head of hydrogen programs for NASA, Bain has discovered that a tragic design flaw may have led to the conflagration. Using shreds of fabric recovered from the *Hindenburg*, Bain analyzed and re-created the protective coatings used on its cotton skin. The compounds proved to be a lethal mixture very similar to rocket fuel. His conclusion: A discharge of static electricity ignited the volatile covering and melted the craft's huge hydrogen cells. The resulting fire consumed the *Hindenburg* in less than a minute and ended forever the golden age of passenger airships.

■ PROGRAM GUIDE

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IMAGINE IF YOU COULD PLAN YOUR DAY AROUND YOUR LIFE INSTEAD OF YOUR ARTHRITIS PAIN.

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You take VIOXX only once a day. Just one little pill can relieve your pain all day and all night for a full 24 hours.

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In clinical studies, once-daily VIOXX effectively reduced pain and stiffness. So VIOXX can help make it easier for you to do the things you want to do. Like sitting down on the grass to watch your kid's game.

TAKE WITH OR WITHOUT FOOD.

VIOXX doesn't need to be taken with food. So, you don't have to worry about scheduling VIOXX around meals.

IMPORTANT INFORMATION ABOUT VIOXX.

In rare cases, serious stomach problems, such as bleeding, can occur without warning. People with allergic reactions, such as asthma, to aspirin or other arthritis medicines should not take VIOXX.

Tell your doctor if you have liver or kidney problems, or are pregnant. Also, VIOXX should not be used by women in late pregnancy.

VIOXX has been extensively studied in large clinical trials. Commonly reported side effects included upper respiratory infection, diarrhea, nausea and high blood pressure. Report any unusual symptoms to your doctor.

ASK YOUR DOCTOR OR HEALTHCARE PROFESSIONAL ABOUT VIOXX.

Call 1-800-853-1516 for more information, or visit www.vioxx.com. Please see important additional information on the next page.

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Patient Information about
VIOXX® (rofecoxib tablets and oral suspension)
VIOXX® (pronounced "VI-ox")
for Osteoarthritis and Pain
Generic name: rofecoxib ("ro-fa-COX-ib")

You should read this information before you start taking VIOXX®. Also, read the leaflet each time you refill your prescription, in case any information has changed. This leaflet provides only a summary of certain information about VIOXX. Your doctor or pharmacist can give you an additional leaflet that is written for health professionals that contains more complete information. This leaflet does not take the place of careful discussions with your doctor. You and your doctor should discuss VIOXX when you start taking your medicine and at regular checkups.

What is VIOXX?
VIOXX is a nonsteroidal anti-inflammatory drug (NSAID) that is used to reduce pain and inflammation (swelling and soreness). VIOXX is available as a tablet or a liquid that you take by mouth.

VIOXX is a medicine for:
- relief of osteoarthritis (the arthritis caused by age-related "wear and tear" on bones and joints)
- management of acute pain in adults (like the short-term pain you can get after a dental or surgical operation)
- treatment of menstrual pain (pain during women's monthly periods).

Who should not take VIOXX?
Do not take VIOXX if you:
- have had an allergic reaction such as asthma attacks, hives, or swelling of the throat and face to aspirin or other NSAIDs (for example, ibuprofen and naproxen).
- have had an allergic reaction to rofecoxib, which is the active ingredient of VIOXX, or to any of its inactive ingredients. (See Inactive Ingredients at the end of this leaflet.)

What should I tell my doctor before and during treatment with VIOXX?
Tell your doctor if you are:
- pregnant or plan to become pregnant. VIOXX should not be used in late pregnancy because it may harm the fetus.
- breast-feeding or plan to breast-feed. It is not known whether VIOXX is passed through to human breast milk and what its effects could be on a nursing child.

Tell your doctor if you have:
- kidney disease
- liver disease
- heart failure
- high blood pressure
- had an allergic reaction to aspirin or other NSAIDs
- had a serious stomach problem in the past.

Tell your doctor about:
- any other medical problems or allergies you have now or have had.
- all medicines that you are taking or plan to take, even those you can get without a prescription.

Tell your doctor if you develop:
- ulcer or bleeding symptoms (for instance, stomach burning or black stools, which are signs of possible stomach bleeding).
- unexplained weight gain or swelling of the feet and/or legs.
- skin rash or allergic reactions. If you have a severe allergic reaction, get medical help right away.

How should I take VIOXX?
VIOXX should be taken once a day. Your doctor will decide what dose of VIOXX you should take and how long you should take it. You may take VIOXX with or without food.

Can I take VIOXX with other medicines?
Tell your doctor about all of the other medicines you are taking or plan to take while you are on VIOXX, even other medicines that you can get without a prescription. Your doctor may want to check that your medicines are working properly together if you are taking other medicines such as:
- methotrexate (a medicine used to suppress the immune system)
- warfarin (a blood thinner)
- rifampin (an antibiotic)
- ACE inhibitors (medicines used for high blood pressure and heart failure).

What are the possible side effects of VIOXX?
Serious but rare side effects that have been reported in patients taking VIOXX and/or related medicines have included:

- Serious stomach problems, such as stomach and intestinal bleeding, can occur with or without warning symptoms. These problems, if severe, could lead to hospitalization or death. Although this happens rarely, you should watch for signs that you may have this serious side effect and tell your doctor right away.
- Serious kidney problems occur rarely in patients taking NSAIDs.
- Severe liver problems occur rarely in patients taking NSAIDs. Tell your doctor if you develop symptoms of liver problems. These include nausea, tiredness, itching, tenderness in the right upper abdomen, and flu-like symptoms.

More common, but less serious side effects reported with VIOXX have included the following:

Upper and/or lower respiratory infection and/or inflammation
Headache
Dizziness
Diarrhea
Nausea and/or vomiting
Heartburn, stomach pain and upset
Swelling of the legs and/or feet
High blood pressure
Back pain
Tiredness
Urinary tract infection.

These side effects were reported in at least 2% of osteoarthritis patients receiving daily doses of VIOXX 12.5 mg to 25 mg in clinical studies.

The side effects described above do not include all of the side effects reported with VIOXX. Do not rely on this leaflet alone for information about side effects. Your doctor or pharmacist can discuss with you a more complete list of side effects. Any time you have a medical problem you think may be related to VIOXX, talk to your doctor.

What else can I do to help manage my osteoarthritis pain?
Talk to your doctor about:
- Exercise
- Controlling your weight
- Hot and cold treatments
- Using support devices.

What else should I know about VIOXX?
This leaflet provides a summary of certain information about VIOXX. If you have any questions or concerns about VIOXX, osteoarthritis or pain, talk to your health professional. Your pharmacist can give you an additional leaflet that is written for health professionals.

Do not share VIOXX with anyone else; it was prescribed only for you. It should be taken only for the condition for which it was prescribed.

Keep VIOXX and all medicines out of the reach of children.

Inactive Ingredients:

Oral suspension: citric acid (monohydrate), sodium citrate (dihydrate), sorbitol solution, strawberry flavor, xanthan gum, sodium methylparaben, sodium propylparaben.

Tablets: croscarmellose sodium, hydroxypropyl cellulose, lactose, magnesium stearate, microcrystalline cellulose, and yellow ferric oxide.

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NATIONAL GEOGRAPHIC

Earth Almanac



BOTH BY NATIONAL GEOGRAPHIC PHOTOGRAPHER MICHAEL NICHOLS



One Happy Gorilla Orphan, One Sad Case

Nine years ago Michael Nichols photographed two western lowland gorillas at the now defunct Brazzaville Gorilla Orphanage in Congo. One was a two-year-old male called Kola (above, at center). His mother had been killed by poachers; he had been rescued from pet dealers. Kola adjusted so well that today (page 87) he has become the dominant male in a group of orphans released from the orphanage into the wild.

But another young male, Yambo (left), has been traumatized. About eight years ago during a walk outside the orphanage, he was wounded, probably by a frightened villager. Now age 12, he remains intractably aggressive and must be kept behind bars (page 91).

Something to Hum About

Black-chinned hummingbirds engage in high-speed chases when vying for nectar—and also emit tiny squeaks. Working in Arizona, University of Wisconsin-Milwaukee biologist Kathryn Rusch wondered what the birds were chattering about. She recorded the sounds, analyzed them with a computer, and found that each vocalization contains an average of seven notes, which show well-organized patterns. "These hummingbirds have their own grammar," Rusch says.



STEVE AULSTON



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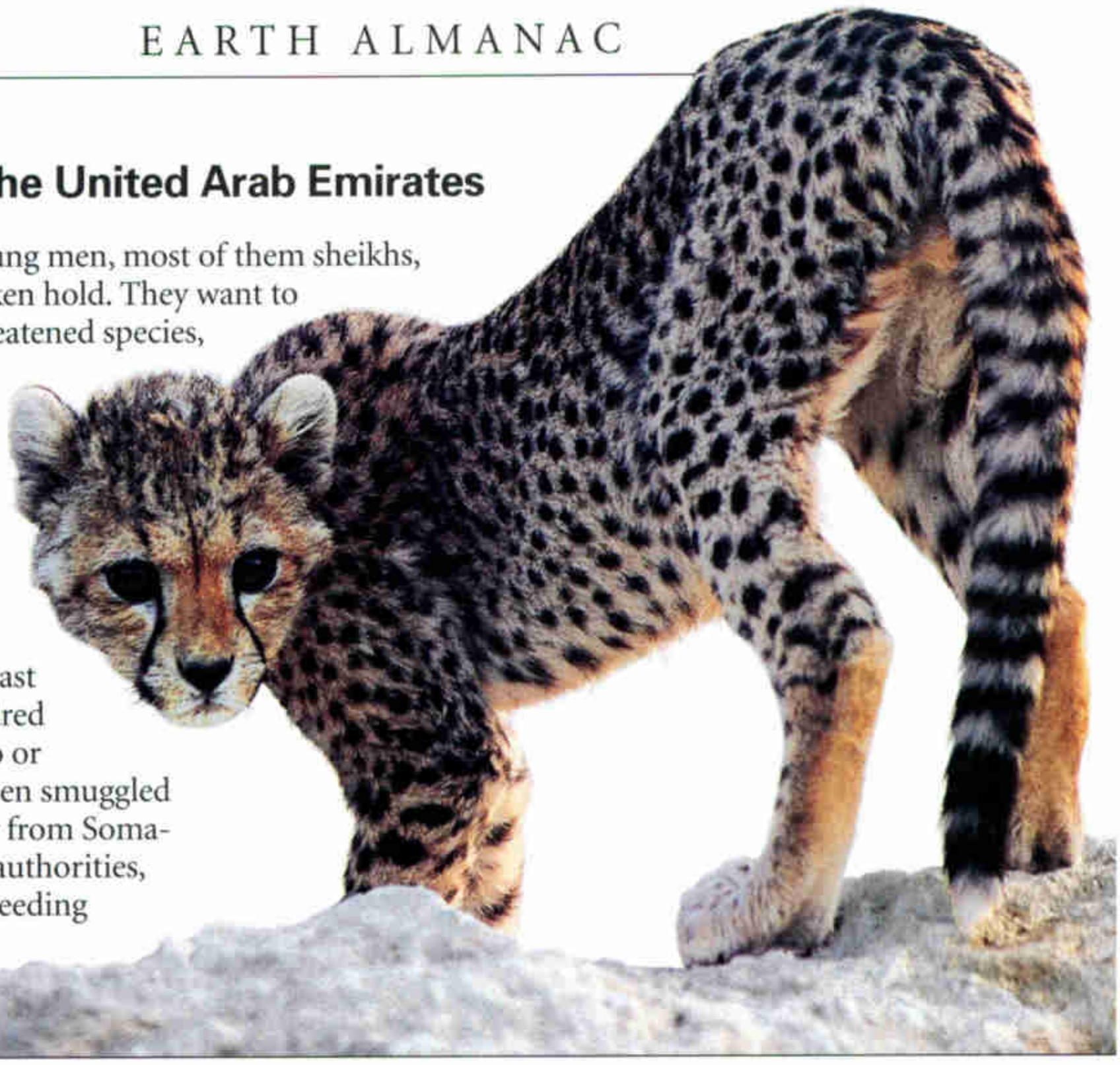
"Gee"

echnology.

Always use seat belts. Remember a backseat is the safest place for children.

Cheetah Chic in the United Arab Emirates

Among some wealthy young men, most of them sheikhs, a romantic notion has taken hold. They want to raise baby cheetahs, a threatened species, and teach them to hunt gazelles in the desert. The demand has loosed a flood of illegal cheetah imports into the United Arab Emirates, according to the international Cat Specialist Group. In the past two years perhaps a hundred cheetahs—some only two or three weeks old—have been smuggled into the country, possibly from Somalia. When confiscated by authorities, some are cared for at a breeding center in Sharjah.





Hot Issue: Burning Off Oil Spills

Ignited by explosives and napalm, the *New Carissa*'s fuel oil burned last February after the freighter ran aground in Oregon's Coos Bay. Burning off a vessel's oil is seldom done in mainland U.S. waters because of concern about the smoke's health hazards. But with storms approaching, officials managed to burn about half the ship's 400,000 gallons. "Due to the wind direction there was no grave public health threat," says Yvonne Addassi, an environmental specialist in California. She has proposed dividing that state's coast into ten zones to help decide whether to burn a vessel's oil.

Deaf to Danger: Manatees Can't Hear Boats

Nearly 900 manatees have been killed in Florida since 1974 by boats. "Some people think manatees are too slow to get out of the way," says Edmund Gerstein of Florida Atlantic University. He and his wife, Laura, tested two captive manatees and found that they have trouble hearing low-frequency sounds, such as an outboard motor (a diver's legs protrude beneath). The Gersteins are developing a high-frequency warning device—which manatees could hear—that can be attached to boat hulls.

TEXT BY JOHN L. ELIOT



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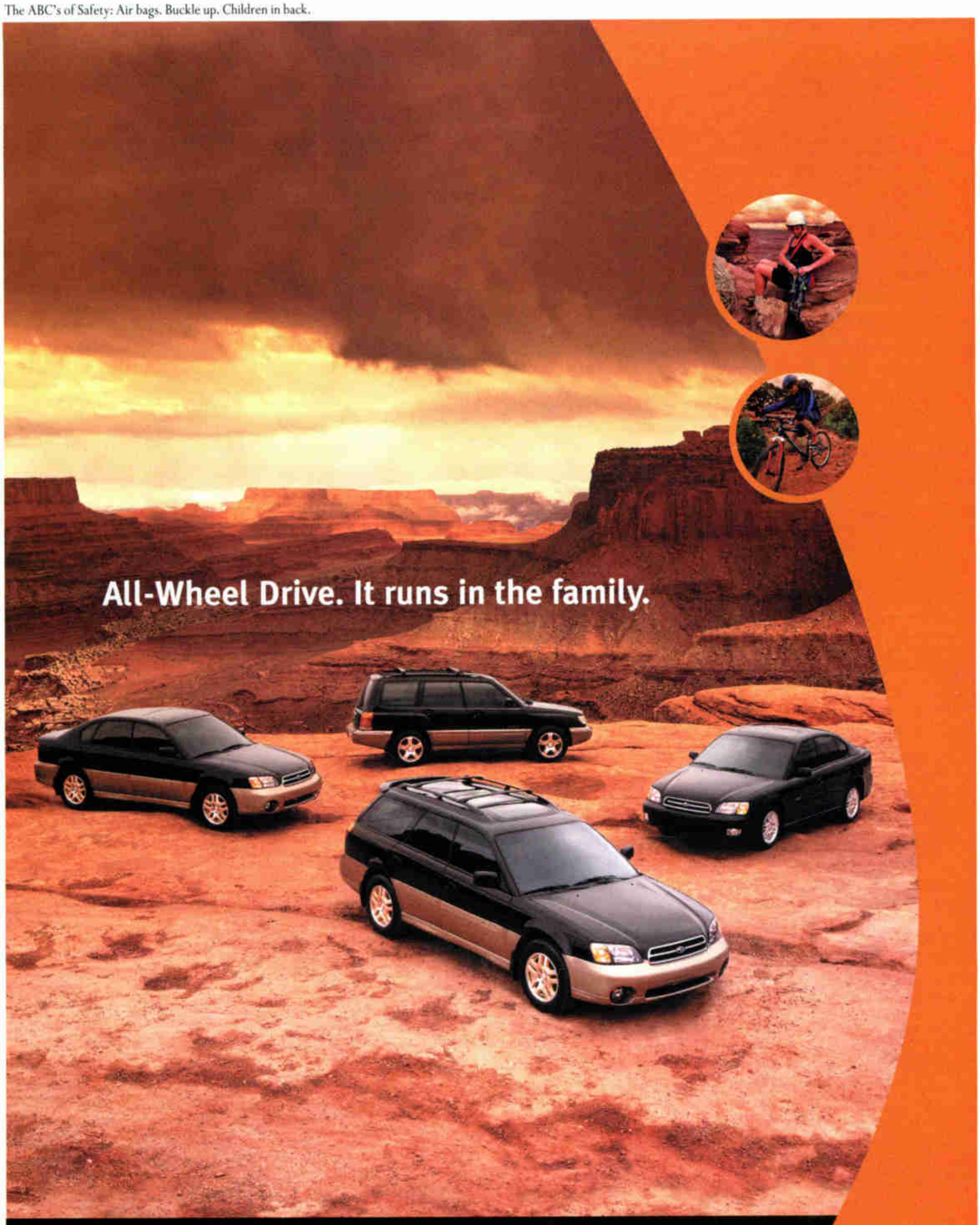
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ALEXANDRA BOULAT

From the Editor

THEY ARE JUST A PAIR OF HANDS, marked in ink with letters, numbers, and symbols that place their owner within a certain group in a refugee camp outside Yugoslavia. As thousands of ethnic Albanians fled the rampage of Serb violence in Kosovo last year, the markings were used to identify a group of refugees being relocated to Turkey.

Yet those hands haunt us. They are a whisper of a not-so-long-ago madness that swept across Europe, of tattooed serial numbers and death camps. The evil in Belgrade was not the evil in Berlin but chilling evidence of the wickedness that arises when one ethnic group draws a border of superiority between itself and a less influential one. And there are other such borders: racial, as examined in our article about the African-American struggle for voting rights, and political, as explored in our story about the Black Dragon River, the winding barrier between China and the former Soviet Union where for decades mutual distrust threatened to explode into war.

Witness the scenes of a destroyed village and rounded-up citizens trudging along a railroad track in Priit Vesilind and Alexandra Boulat's portraits of Kosovo and the Albanian people—and just try to silence the whispers.

Bill Allen

ON THE EDGE

Black Dragon River

OF EMPIRES

The Chinese call it Heilong Jiang, or Black Dragon River. The Russians—and most Western maps—name it the Amur. For 1,100 miles this frontier river, the world's eighth longest at 2,744 miles, forms a sometimes uneasy border between two world powers. Near the mouth in Russian territory, a fishing boat traffics the wide passage.



Clad in skins and furs, an Oroqen hunter, member of a once nomadic people on the Chinese side of the river, braves minus 30°F to track moose and deer. Forests and wetlands hem long stretches of the Amur, its watershed increasingly exploited by farmers and loggers.



By SIMON WINCHESTER
Photographs by REZA

THERE IS SOMETHING very remarkable indeed about what the Chinese call the Black Dragon River, the Heilong Jiang, and I remember quite vividly first noticing it sometime in the late seventies, on a blisteringly hot Sunday morning in the middle of summer.

I stepped up to a telescope in the dusty riverside town of Heihe, where a few young entrepreneurs had found and set up ex-army periscopes and telescopes so that the curious could see into the Russian town of Blagoveshchensk, a place as alien as if it were on the far side of the moon.

The telescope's shutter opened when I paid its persuasive owner the equivalent of a few pennies—and in an instant I saw for myself the ordinary details of life in Blagoveshchensk. A young couple strolling hand in hand beside the river—she had blond hair, was wearing a gingham dress; he was in shorts and a T-shirt, and he was walking a dog. A group of children playing soccer. A young soldier with red hair sitting at an open-air restaurant, eating a piece of pie. A couple of girls sunbathing, wearing the none-too-flattering bikinis that Russians favored in those days. Two old men playing chess, outside what looked like a church. A young man, his head under the hood of a broken-down old car, tinkering with an engine.

All was so very ordinary—and yet all was so profoundly different from everything that surrounded me on this bank of the river that the impression struck me like a thunderbolt.

Here, beside me, were endless thousands of Chinese people, all with black hair (or gray, if a little older), most of them wearing drab blue uniforms and all in so many ways different from those people who were no more than a slingshot's distance away.

Here most people worshiped—if they chose to worship at all—or followed the precepts of either Buddha or Confucius. They ate rice. They used chopsticks. They wrote in ideograms. They were—ethnically, culturally, anthropologically—Asian people, descendants of people who had inhabited these plains since time immemorial.

And yet less than 900 yards away, the people over there were quintessentially Europeans—Russians, Ukrainians, Swedes, Germans—who had been transplanted by immigration and colonization, and whose cultural and linguistic and spiritual roots had remained defiantly unchanged for generations. Over there they wrote in Cyrillic, they worshiped (if permitted to worship at all) in Eastern Orthodox Christian churches, they ate borscht and black bread and potatoes and wouldn't know what to do with chopsticks. They had red and blond and brown and auburn hair. They dressed, if they could afford to, in jeans and skirts and recognizably Western clothes and shoes. And they kept pets—dogs, cats—which, unlike the birds and fish favored on the Chinese side of the river, displayed affection, loyalty, and warmth.

Two more different cultures could hardly be imagined—and yet here they

were, separated simply by a narrow, swiftly flowing river that one side called the Black Dragon and the other the Amur. Were it not for a large Soviet gunboat moored by a buoy in midstream, it would have been so easy to sail across, or to bridge, or even to swim.

The Black Dragon is the eighth longest river on the planet and is sufficiently remote to be bridged only twice in its nearly 2,800 miles of length, carries nearly one hundred species of fish, and, in the six months of the year when it is unfrozen, surges lustily eastward carrying vast quantities of water and more than 25 million tons of silt into the North Pacific. The engaging people who live along the river may drink reindeer's milk or be Old Believers with beards who seem to have stepped out of some tsarist time warp. But what is most unusual about the Black Dragon River is obvious to anyone who has a good map. At no other place does a river divide two empires so ancient and vastly different.

This stark and simple reality underlies almost every aspect of life for the eight and a half million people who live along the river's length. With Russia and China having changed so dramatically and their relations with each other and the rest of the world having metamorphosed out of all recognition, it is not, given today's rivalries, a necessarily good reality either. The fast-changing political moods of the moment are these days leaving both sides concerned, uncertain of each other's possible plans.

Are the hopes and aspirations of those on both sides of the Amur River frontier currently honorable and well intentioned? Are the 900 yards of the river's width likely to prove barrier enough to keep Russia comfortable at the prospect of China's growing influence? Should the river, where it forms the frontier, be bridged—physically and metaphorically? Should a dam be built and the river turned into a vast lake? Should trade—formal, organized trade—be encouraged, or should it be suppressed?

Is the Amur River, both sides currently wonder, a physical phenomenon that is set eventually to unite two immense tracts of remote and valuable real estate—or is it a symbol of a permanent and ineradicable division?

NOT FOR NOTHING has the remote and cold vastness of Siberia been called the land "east of the sun." To a sophisticated urban dweller in Moscow, Siberia is almost impossibly distant. But however remote Siberia might be, the Amur River lies even beyond that.

Where the river eventually spills, by way of a large gulf, into the Sea of Okhotsk is no less than 6,000 miles from Moscow, seven time zones away. Flights from Moscow take 12 hours to get there, often longer. The railway journey can take a week. To go by road is well-nigh impossible. The telephone connections are patchy.

When I told a woman in Moscow of my plans to visit this corner of Mother Russia's outer darkness, she seemed incredulous.

"So far away," said one old lady, bound for Novosibirsk. She was shaking her head when I told her my destination. "Why would anyone want to go there? No one goes there—except prisoners, of course."

The Amur River—let us settle, in this narrative, on this one name in a region where place-names change constantly—rises in China, curves through endless birch forests and taiga, and finally oozes out to sea by the grim city of Nikolayevsk na Amure.

It was via airplane and the Trans-Siberian Railroad, which joined the two ends of the Russian Empire together in 1904, that I returned to the Amur after my 20 years away. I arrived just before dawn in the middle of a blizzard at a forest town called Skovorodino, close to where the Argun and the Shilka Rivers join and the Amur proper begins. My idea was to progress downstream from there, close to the Greater Khingan mountains of Inner Mongolia, in time to reach the open sea before the ice closed in for the winter.

AMUR 黑龙 **Indelible loyalty to a cause led Gennady Vaslyevich as a soldier to tattoo his chest with the heroes of Russian communism—Marx, Engels, Lenin, and Stalin. Today a poor pensioner living on the streets of capitalist Khabarovsk, he weeps when asked to recall his better times.**



AMUR 黑龙 A big payday—completely illegal—awaits poachers hauling aboard a kaluga sturgeon, the largest of which can supply 400 pounds of caviar. The poachers snare the threatened sturgeons near the

river's mouth as kaluga chase spawning salmon. Undeterred by authorities—a policeman ordered meat from this haul—poachers instead fear the pollution that recently has been fouling the roe.

As the blue-and-cream cars of the *Rossiya* express creaked away, heading east for Khabarovsk and Vladivostok with the smoke from its coal-fired samovars wafting into the forest at the ends of each car, the problems began. Skovorodino, like many of the half-forgotten towns of the Russian Far East, is still what is called a "deep red" town—still run by men and women who refuse to believe that the era of communism is over and that democracy and openness are the law of the land.

So I was detained for most of an entire day by an unsmiling youth named Roman Mikhailovich Sergeev, who worked in the local office of the Federal Security Service—a child of the old KGB. Foreigners, he told me, were not permitted in Skovorodino, so I should not have disembarked from the train. Foreigners most certainly were not permitted within 30 kilometers of the riverbank—and so if I entertained any idea of going to see the Albazino Lore and Historical Museum nearby, I should forget it: There was a border security force checkpoint on the track to the riverside, and even if I were lucky enough to be permitted the opportunity to remain in Skovorodino—not an entirely pleasing prospect, since it appeared an almost wholly ruined town, with few stores and one hotel with dirty beds and sporadic hot water—I would certainly not make it to the banks of the Amur.

"Besides, why do you want to go there?" Roman asked. "There is no need for you to go." I explained that I was interested in the

AMUR 黑龙

Rising on a distant height in China's Inner Mongolia, the Amur exits undammed in the Russian Far East, coursing through a plush floodplain near the Tatar Strait. The Amur's fertile bottomland and its access to the North Pacific roused Russian settlers in the mid-1800s to colonize the northern bank, negating Chinese treaty claims.







town's history. "It is all in books. Read the books. Except they are all in Russian." (He smiled at this.) "And the library is closed." (He smiled even more broadly.)

And so while the permissions to stay and to travel to the riverbank were sought, Roman told me his guiding philosophy: that Stalin was the greatest figure in world history, that North Korea was the only true paradise left on Earth, that the gulag camps I would surely find toward the lower end of the river were designed only to punish the criminals, and that no one who was innocent had anything to fear from them.

His views were unsmilingly stated, implacably held, and amenable to no reasonable argument. Roman seemed like a well-oiled machine—never angry, wholly efficient, polite, and as cold as ice.

THE PERMISSIONS CAME TOO LATE. The small, half-deserted riverside village of Albazino—site of a serious setback to Russian ambitions in the Far East—remained elusive. Perhaps local officials were reluctant to show off the village, I thought, because it represented a defeat in Russian history.

Three centuries ago Cossack adventurers

SIMON WINCHESTER, author of the best-selling book *The Professor and the Madman,* has traveled extensively in Russia and China. A previous book, *The River at the Center of the World,* documents his 1995 journey up the Yangtze. Recent GEOGRAPHIC assignments have taken Paris-based, Iranian-born freelance photographer REZA from China's Xinjiang region to the Nile and the Caspian Sea.



AMUR黑龙 **Vodka on the rocks: Front row seats for the best show in Khabarovsk lure dealers from the local casino to watch river ice break up and parade toward the sea on a late April day. For half the year the**

river freezes to depths of six feet or more, serving as a truck route in a region with few roads. In warm months the Amur is navigable for much of its length, carrying barges, ferries, and gunboats.

fanning out into the region in search of furs, known then as soft gold, stumbled across the village but had no clear idea of who its unfamiliar-looking inhabitants might be, nor of their citizenry. They wiped them out and built a fort on what they believed to be newly acquired Russian territory.

It in fact belonged to the Manchu, the dynastic rulers who since 1644 had dominated northern China. They, in the person of the emperor in the faraway Forbidden City, were outraged when they discovered round-eyed people busy settling in their midst, on their hereditary northern lands. The court decided to drive them out: And so it was at the Albazin fort, in 1686, that the Cossacks were surprised, besieged by thousands of Manchu warriors, and were forced, after two fierce battles, to abandon the fort.

The Manchu swiftly forced the Russians to negotiate a permanent settlement: The Treaty of Nerchinsk of 1689 (with Jesuit priests fluent in Russian, Latin, and Manchu acting as interpreters) placed the entire Amur River, right bank *and left,* under Chinese control. The Albazin stockade was formally ceded to China, and the entire northern bank remained Chinese territory for almost two centuries.

In Skovorodino the chief of the border security force—whose guards are armed with attack dogs that had been trained to bring down any would-be Chinese immigrants—had more immediate concerns on his mind. He said that as many as 300 people tried to get through each year—"more in winter, because they can walk across the ice." Their motive was the same as mine: to get aboard a train on the Trans-Siberian Railroad.

Yet in that regard we differed, the Chinese and I. They, if they eluded the barbed wire and the attack dogs, would be heading north and west, hoping to ride the rails to wide-open spaces and freedom. I, on the other hand, was heading eastward, making first a long curving



AMUR 黑龙

Simple fare of bread, soup, and corn fuels laborers at a privately owned gold mine in the hills near Komsomolsk na Amure. Enduring stifling heat and swarms of mosquitoes as they bulldoze a streambed, the workers expect to earn $1,500 for six months' toil, a decent wage in post-Soviet Russia. The mine's take of gold—four kilos (below) after several days—is guarded by armed sentries in response to a rash of thefts in the region.





track toward the south, precisely paralleling the now mighty river that flowed in the same direction 30 miles away, and in whose valley the railroad had been built.

WHEN DAWN BROKE, the train had left the snow behind, and we were deep in the green sea of the far eastern forests. These virgin tracts of larch, pine, hemlock, spruce, and birch make up one of the largest remaining stands of timber in the world, a priceless ecological and economic resource. Unfortunately they are also terribly prone to summer fires: And there was evidence on both sides of the railway—wrecked and blackened houses, twisted iron, stretches of pale green new growth in acres of charred wood—to show that this past summer had been no better than usual.

One of the greatest fires in the world occurred here in May 1987: The Black Dragon fire—or the Great Chinese Fire, as it is also known—raged for a month and devastated more than 46,000 square miles on the Russian side of the Amur and perhaps 5,000 square miles on the Chinese side.

During the fighting of the 1987 fires, not one Chinese helicopter or water-bombing plane was allowed to enter Russian airspace, nor were any Russian firefighters, members of an elite enormously experienced in controlling forest blazes, invited to come and help the Chinese. Relations are better today: There is talk, up in these northern regions, of a joint fire commission, to make sure that no such

tragedy recurs and that the timber in the valley is never subjected to such a threat again.

IT WAS LATE AFTERNOON when the train roared through the dire industrial town of Svobodnyy, where there is a cosmodrome—used in 1997 to launch a commercial American satellite. I turned off the main Trans-Siberian route onto a southbound spur, to Blagoveshchensk. It was already dark when the train pulled in to the cavernous station—though the station clock, kept on Moscow time like all Russian station clocks, said it was only 2 p.m. I checked into a hotel called the Druzhba, Friendship, having made sure I had booked a riverside room.

This was important: I was about to see, the following dawn, the mirror image of the sight that I had gazed at through the telescope 20-odd years before. On the opposite bank of the river, if my map was correct, stood the Chinese city of Heihe, and I wanted to see how it had changed. A few moments after sunrise I swept back the bedroom curtains and took my first long look at modern riverside China.

It was barely believable. Heihe, little more than a dusty, flyblown place of shacks and tenement blocks in the 1970s, was like a sunburst: A gleaming city of new white-tiled skyscrapers, the horizon wild with swinging cranes and the air humming with the sound of distant jackhammers echoing across the river, Heihe stood as a modern, bustling monument to Chinese pride. Everywhere there were towers of steel and glass stretching from side to side on the far bank, which was crowded with hotels, casinos, department stores, trade centers.

By contrast, beside me on Russian soil were broken-down buildings, half-completed monuments to long-forgotten political hacks, windows of cracked glass, half-empty stores, old communist workers' halls and administrative buildings. This China across the river was a place more removed from Russian imagination than New York or Paris or Rio.

Here, almost in hailing distance, was a reality that was the dominant feature of what tomorrow might mean for Russians, who often viewed their neighbors with resentment and real apprehension—at least in private. The publicly expressed opinion was another matter. Anatoliy Belonogov, the genial and burly governor of Amur Oblast, the vast region that has its administrative headquarters in Blagoveshchensk, expressed only the warmest of feelings for the Chinese whose buildings dominated the skyline half a mile away. His office was huge, with a commanding view of the river. His paintings and sculptures were of old Russian explorers and Cossack heroes. Everything spoke of yesterday. And what about tomorrow, I wondered?

"We regard optimistically the development of China-Russia relations," Belonogov said. "Our governments have agreed on a strategic partnership in the 21st century. To promote trade, we have signed an agreement on building a bridge across the Amur near Blagoveshchensk and Heihe. And we maintain regular business contacts with the leaders of the Chinese territories on culture, economy, tourism, sports, and ecology. Our region is developing relations with China on the basis of a wise Oriental proverb: The relations with close neighbors are more important than the relations with faraway relatives."

A few hours away, in the small town of Tambovka, a junior administrator, Sergey Tkachenko, was less sanguine. He ran one of the largest farm districts—16 collective farms, 250 private farms—and presided over what he glumly admitted was a near-ruined economy. Few workers had been paid in the past three months.

"But we live, we smile, we are not going to die," Tkachenko said. "We hear all this talk about selling our produce to China, which is so close. But the fact is we can't, or don't, and that is largely because of suspicion, on both sides.

"It comes in many ways," he added. "When we had the celebrations of the 140th birthday of our town, it was only the Chinese delegates who did not offer a toast of congratulations. I heard someone congratulate the Chinese on building good-quality houses in Blagoveshchensk, and they said, 'We're building for ourselves, for our future.' There are signs everywhere that make us wonder about what China's plans are."

Down in Beijing, Russia's fears of Chinese expansionism are dismissed as mere fantasy—a spokesman noted that talks were continuing even today on the detailed definition of the river frontier, of just where in the middle of the Amur channel the actual border should be



Stalin's Secret Tunnel

To expose the dark reaches of Soviet history, researchers have begun searching the Amur region to uncover remains of the gulag—the system of forced-labor camps that turned Siberia and the Far East into what one historian called "the devil's workshop." During his terrorizing reign from 1928 to 1953, Joseph Stalin exiled millions of people—dissidents, ethnic minorities, prisoners of war, and common criminals—to detention camps in the far eastern wilderness. The inmates were worked like slaves, forced to build towns, factories, dams, and pipelines and to dig mines and log the forest. Uncounted numbers died from hunger, maltreatment, and disease.

In the summer of 1999 researchers from the Khabarovsk history museum and from Memorial, an organization dedicated to commemorating gulag victims, invited photographer Reza to join them on a visit to camps on the coast south of Nikolayevsk na Amure at the Amur's mouth. From camp survivors and prisoners' memoirs came reports of Stalin's grandiose plan to build a secret railroad tunnel from the Soviet mainland under the Tatar Strait to Sakhalin Island and thus tie together his empire. On Cape Lazareva at the edge of the strait, investigators located a 225-foot-deep construction shaft (above). The research of Memorial's Marina Kuzmina indicates that in 1950 more than 5,700 prisoners were conscripted to dig the seven-mile-long tunnel. The inmates were spared years of grueling work when the project was canceled following Stalin's death in 1953. Recently Russian entrepreneurs have talked of finishing the tunnel to speed travelers across the strait.





The Russian forest swallows the barracks of a former penal camp, its grounds and prisoner-built road marked by the fresh green of young trees. At the ruins of camps along the Tatar Strait, researchers found poignant remains: a guard tower, a heap of boots, bent iron bars. Though most sites were abandoned and most prisoners released by 1956, "corrective





labor camps" persisted in the region. The brutal history of the gulag and the names of its mostly innocent victims—information long suppressed by authorities—are now coming to light. Says investigator Marina Kuzmina: "We must not forget the totalitarian past when every human right was abused. Our task is to unveil these layers of history so such actions will never be repeated."



sited. The notion that China might ever want territory on the northern side of the river was nonsensical, according to the spokesman. With Hong Kong and Macau now returned to the fold, only Taiwan remains as an irritant to Chinese territorial pride. The Russian-Chinese frontier line has, the spokesmen in the Chinese capital insist, been settled to everyone's satisfaction.

The only talk you hear of the possibility—aside from fears expressed in some offices in Russia—comes from merchants in towns on the Chinese banks of the river, far away from authority. There are Chinese merchants who look hungrily across the river and wonder, but their wondering is heard and understood across the stream, and people worry.

I CROSSED THE RIVER into China the next day, aboard one of the frequent daily ferries that make the ten-minute shuttle. The boat was full of Russian men and women, all carrying empty plastic garbage bags or those red-white-and-blue striped plastic shopping sacks that can be seen all over the poorer parts of today's Asia, particularly in the Philippines, and which are known derisively as "Manila Vuitton." I spoke to one young woman, named Irina, who worked in a Russian candy factory but who had not been paid for six months. She gets by, as do all her friends on this boat, by working for the Chinese, hauling back into Russia so-called bricks of inbound trade goods.

"I go over for the afternoon with my empty bags—I meet my contact in the market, he fills my bag with stuff he wants to sell back in Blagoveshchensk, and I carry it back. I get paid 150 rubles. Sure it's humiliating, working for the Chinese, hauling their goods. But I need the money. I can't argue.

"I just wish we had something to sell to them," she said. "But we don't make anything. And you wait and see what I bring back. It'll be good stuff."

And an hour later, during which time I made my way to a revolving restaurant on top of a brand new Heihe hotel and ate a lunch of fried pork, rice, Chinese kale, mango pudding, and Tsingtao beer—all foods rare in the Russian Far East—I met Irina again. She was slowly and painfully lugging the full plastic bags down to the dock, past the idle gaze



AMUR 黑龙

Walking a barbed-wire trail near Kazakevichevo, Russian border guards provide the first line of defense against a Chinese invasion—of illegal immigrants seeking work. Russian officials say that each year hundreds of Chinese from the overcrowded south are crossing the border, many sneaking across the frozen Amur, here hidden by trees. Russian and Chinese troops last clashed near the river in 1969.

of the Russian customs men. She opened a corner of one: There were T-shirts, sandals, blocks of tea, and scores of heat-sealed plastic bags of Chinese-made whiskey and, of all things, vodka.

Later in the day I met another woman carrying a similar load: "Can you imagine the real humiliation of that—the Chinese getting me, a Russian girl, to lug Chinese-made vodka back into Russia to help them make money. It is totally shameful, don't you think?"

The trade goes on throughout the year, the summertime boats being replaced in mid-November by motor buses that shuttle across the ice. In recent years the Chinese have set up a duty-free market on a sandspit lying just on their side of the midline that officially divides the two nations; Russian citizens can shop



there openly—on those rare occasions when they have money to spend.

And the result of all the trade is a steadily more prosperous China, and a Russian Far East that is becoming, with equal steadiness, more impoverished. "We have dreams," said Belonogov. "We sell them soybeans, scrap metal, lumber, and electricity. But they sell what the people want. And their profits go to making new cities like Heihe. Our profits—where do they go? I hate to think."

The answer to that last question is known. The profits go to the shadowy Russian underworld—to the dealmakers and brokers and legions of sharp-suited, fast-talking, SUV-driving, heavily armed men without whom, it seems, no commercial deal in Russia is possible. The corruption remains almost willfully uncontrolled, and the long-term effects are dramatically visible when comparisons are made—as here on the Amur—between what is accomplished and what is possible, by the two peoples who live, essentially, in one and the same place. If the Black Dragon River Valley of China is so very rich, then why is the Amur River Valley of Russia, which is geographically essentially the same place, so desperately poor?

To an extent—and leaving aside such chronic problems as corruption and inefficiency—this part of Russia remains firmly trapped in poverty because it remains so mired in history and, in these outer reaches of the nation, so mired as well

AMUR黑龙 **Within shirt-waving sight of Russia, residents of Heihe, China's northernmost city, wash up near a floating restaurant. On this stretch Russian troops in 1900 drowned thousands of Chinese**

during the Boxer Rebellion. In the 1960s Chinese civilians massed here to jeer at Soviet soldiers. Today ferries cross the river, and officials from both sides promise a bridge to link the opposing shores.

in outdated ideology. Nowhere along the Amur Valley is this combination more obvious than in a tiny autonomous region, some two hundred miles downstream, known generally as Birobidzhan but officially known as the Jewish Autonomous Region (JAR). Here is the site of one of Stalin's great follies, and one of the more bizarre remnants of the Soviet order.

Joseph Stalin, like many Russian rulers, had long sought to do something with the three million Jewish people in his country. These citizens, lacking a nation and yet having a formidable array of skills and a powerful social cohesion, made their Russian neighbors feel eternally uncomfortable. Stalin's plan was to create a homeland for the Jews, a Zion within Russia—a land of wilderness and hardship to which the Jewish community could go and create from its barren plains a land of milk and honey.

He had chosen for the Jews a 14,000-square-mile tract of land north of the Amur River between Blagoveshchensk and Khabarovsk. Doubtless part of his purpose was to put the Chinese and the Japanese on notice that this was Russian soil and could never be taken away.

Henceforth as many Russian Jews as possible—including those who had once lived in the so-called Pale of Settlement west of Moscow—would be encouraged to live in this corner of Siberia. Some Jewish leaders around the world took up the cause. Jews would receive subsidies, run their own government and their own schools, collect their own taxes. Moreover, they would be free to speak and read and write in their traditional language, Yiddish.

The language is still spoken in Birobidzhan; there is even a Yiddish radio station—but almost no Jews. The residents of JAR did not escape Stalin's purges during the 1930s.

Of the 210,000 inhabitants of today's JAR, only about 8,000—4 percent—are Jewish. "And several times a

AMUR 黑龙



Last-minute shoppers pedal and pace down a car-restricted street in frigid Heihe as Chinese New Year approaches. Profiting from trade with Russia, this upstart city, a backwater prior to the border opening in the late 1980s, celebrates its worldliness with banners promoting the debut of an American movie. Western pinups and a noisy TV distract Oroqen family members (below) near Heihe from the language and traditions of their ancestors.





month a plane leaves Khabarovsk Airport," said Abram Ginzburg, who retired here when he was 60. "They go off to Israel. The Jewish Agency is extolling the virtues of Israel, helping those—most of them young—who want to leave. Five hundred leave every month.

"The experiment was a good one. But it failed. There is no synagogue here. No rabbi. The only Torah scrolls are in the museum. We have to accept that this is no longer a Zion. The idea that this is a Jewish Autonomous Region is outdated now. Most of the people are Russians, like everywhere else. And the Chinese are coming in too—there are three authorized river crossings and trading places here, and they are setting up markets, infiltrating the region, just as they do everywhere else up and down the Amur."

THERE ARE KOREANS in Birobidzhan today also, adding to the impression that the strictly European nature of the region is steadily being eroded, its identity becoming more Asian. In this case it is a firm from Seoul that has a joint-venture factory, making coats and jackets for the American market.

This clothing plant is modern and well heated, has its own day-care center and bakery, and pays its workers *on time*—a rare privilege in Russia.

I came across a woman sewing labels into identical jackets. Both labels had the recommended U.S. retail prices. One said: Old Navy. $18. The other: Chaps Ralph Lauren. $38. The costs for each were identical: five

dollars for labor, two dollars and fifty cents for material.

Koreans are to be found working in the Amur Valley in much more straitened circumstances too. North Koreans, impoverished and brainwashed by years of propaganda from their Stalinist leaders, have been sent regularly into the bleakest parts of Russia and China to perform labor of the lowest kind. There have long been tales of heavily guarded camps of North Koreans working deep in the northern Siberian forests, cutting trees in winter conditions that would cause even the toughest Russians to balk.

Rarely are these stories proven, but I came across a similar camp at a village called Tatyanovka, close to Blagoveshchensk: dozens of the most miserable wretches, living in a barracks-camp of utter squalor, salting cabbages for the Russian Army. I spent about an hour there before the sentries noticed me and sent me packing. I was able to see the tiny rooms—each bare except for a chair, a table, and a picture of the now dead Great Leader, Kim Il Sung, or his son Kim Jong Il in pride of place above a thin folded mattress. I was able to see, too, the brine pits for the cabbage and two lines of men working ankle-deep in mud, pulling the cabbages from the icy ground, their bare hands raw with work and salt water.

I managed to speak to one man. He had been there for six years of an eight-year contract, and the little money he was able to make he sent home to his wife in Pyongyang. "The work is hard," he said, "but I think it is better than at home. There is some kind of freedom here." But I was in mid-conversation when one of the Russian co-owners drove up in a fast car, having been alerted by radio. He demanded that I leave, and when I took a few parting photographs, another man appeared and made it clear he would tolerate no more.



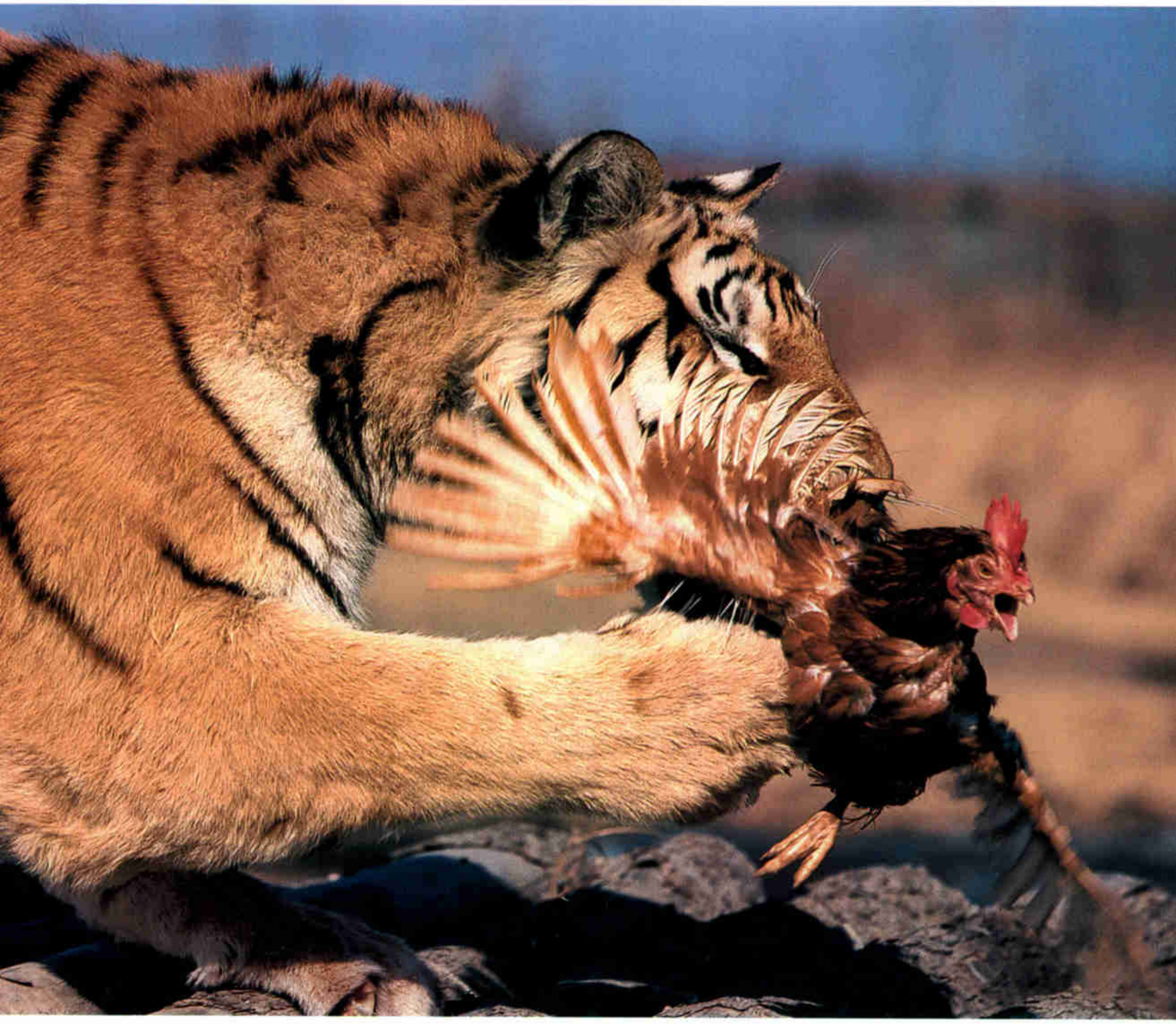
AMUR黑龙

A featherweight is no competition for an Amur tiger confined to a game park in the Chinese city of Harbin. Fewer than 400 of the imperiled subspecies, also called the Siberian tiger, prowl the wilds, mostly in the deep forests of the Sikhote Alin Range near the Russian coast. Conservation efforts have slowed poaching, but hunters are still decimating wild boar and elk, the tigers' favorite prey.

THE WORRIES that some Russians express over the long-term intentions of the Chinese are matched only by their reputed concern over the region's environmental future. The millions of acres of virgin forest and mountain range are still home to an extraordinary variety of wildlife: sable, roe deer, reindeer, boar, brown bear, moose, snow sheep, the endangered Amur leopard—and about 350 endangered Siberian tigers, *Panthera tigris altaica*. The Russian intention is to keep that habitat intact.

One afternoon I stopped my car to talk to an elderly couple in their typical Siberian house—ancient, wooden, with fret-worked windows, with sleeping dogs on the porch and honeybees buzzing in the wildflowers outside. The couple, speaking in the kind of hushed tones one might use in church, said with reverence that they had seen a mother tiger and two of her cubs pass by in the woods just a few weeks before. It seemed to me that they reflected a devotion to the environment in which they are privileged to live.

That contrasts powerfully, many Russians



insist, with what is seen as a lack of feeling for the environment across the river in China. Poachers, said the couple, still stalk the forest to kill the tigers and take their skins and skeletons to China to sell. The officers at the border security force headquarters in Khabarovsk said much the same: They were kept busy catching tiger poachers and arresting those fishermen who would try to catch the endangered sturgeon known as the kaluga, *Huso dauricus,* which, like the tiger, is renowned as the pride and joy of the region. And now the Russians grumble about Chinese plans for building a huge dam across the river in the Khingan foothills.

Vast quantities of pollution wash into the river from northern China. When I was there, floods in the middle section of the Nen had flooded an oil field near the industrial city of Qiqihar, where I saw pollution washing downstream. Then later, at the city of Khabarovsk, the Ussuri River joined the Amur, bringing yet more filth into the main stream, making a river that is clean, beautiful, and magnificent at Albazino seem no more than a memory.

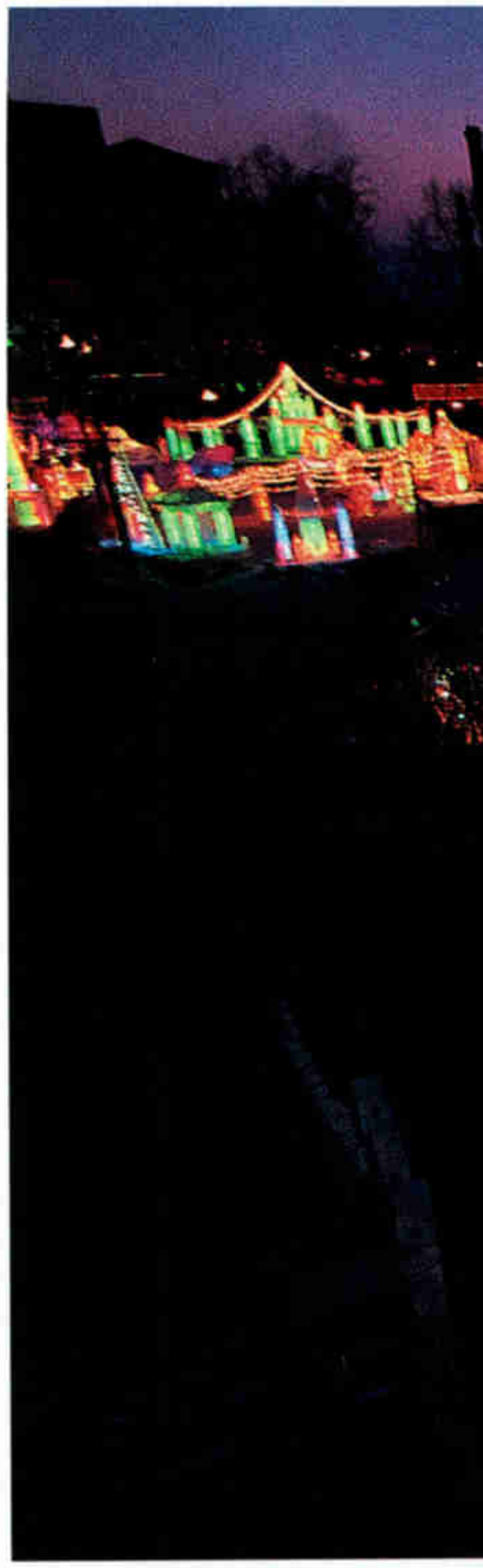
Not, of course, that Russia has an especially good reputation in the environmental world: far from it. The tragedies of nuclear pollution, deforestation, industrial waste, the drying of the Aral Sea, the ruin and poisoning caused by old copper mines and smelting plants—the legacy of the irresponsibility of Russia's communist past is everywhere to be seen. Yet there does seem something different about the popular attitude, now and before,

AMUR黑龙 Innocent war games break out on an ice rink in Harbin, a city that once shivered in fear at the prospect of nuclear attack. During the 1970s when the Soviet Union and China hurled threats of war at

each other, miles of bomb-shelter tunnels were built beneath the city on the Songhua River, a tributary of the Amur. In 1997 Russian President Boris Yeltsin visited here to signal a thaw in relations.

toward Siberia and the Russian Far East.

The vast tracts of purity—endless forests, millions of acres of taiga, huge and unpolluted rivers—that long existed in these parts seemed to imbue those who came to live here with the feeling that they ought to be preserved and protected. The result is that while eastern cities like Vladivostok and Petropavlovsk Kamchatskiy are every bit as grimy and unpleasant as the more notoriously ruined towns closer to the Urals, the Siberian countryside and the Siberian villages seem, by and large, untouched. And in this somewhat unusual context, the ruin to be seen across the river in China and the eccentric attitudes some Russians feel the Chinese have toward wildlife—making so-called cancer remedies and aphrodisiacs from animal parts—deepen the Russians' mistrust of the Chinese.



AMUR黑龙

A candy-colored skyline of ice sculptures sweetens the celebration of Chinese New Year in the boomtown of Heihe. Across the river in dimly lit Blagoveshchensk, poverty-stricken Russians envy and resent the success of their neighbors. For centuries the Amur represented a wall between empires. Leaders now hope that with greater local cooperation and trade, the river will finally help bridge the deep divide.

FROM KHABAROVSK downstream, where the river ceases being a frontier and turns north to flow through the muddy coastal flatlands that are entirely Russian territory, any thought of the Amur being any longer magnificent is quickly dashed. The noble statue of Count Muravyov-Amursky, which presides over the region he opened up so bravely a century and a half ago, looks down over a river whose character changes profoundly for the final 600 winding miles of its life.

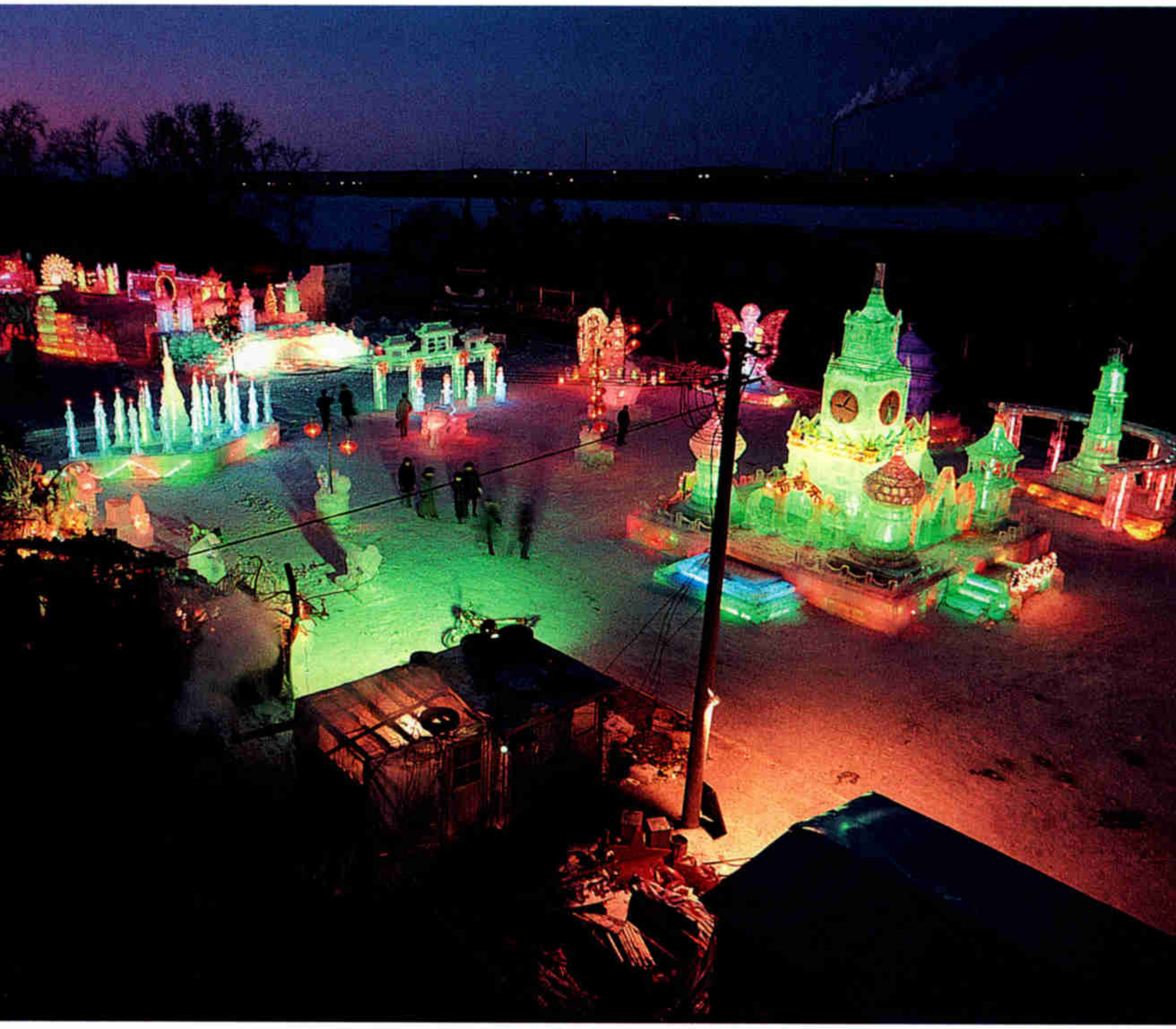
"A most difficult, dangerous river," said a former steersman, Mikhail Sergeevich Kile, who now administers a village 50 miles downriver from Khabarovsk. "A stormy and uneasy stream, feared and loathed by most of us. It is so difficult to keep a boat to the midpoint of the channel, which changes every day, almost every hour.

"Many's the time I was in a big ship bringing iron scrap or soybeans down to the Sea of Okhotsk, and I was in a part of the river so wide that you couldn't see the banks, and yet I knew it was shallow beyond the buoys—and there was a fierce crosswind, and we were being blown across the channel. Ayaaah! It is a difficult river. I'm so glad to be working in an office now."

The villages below Khabarovsk—like the one Mr. Kile administers—are home to the Nanai, the Ulchi, and the Evenk. They cling to their traditions in the face of creeping Russian influence. There are dances, exhibitions, theatrical performances—the village elders teaching the youngsters the traditions. In some villages there are shamans still, travelers of the spirit world and healers of the sick. One old lady I met was nearly blind, and more than 90 years old, and deaf—but was accorded respect verging on veneration. Neighbors brought children to her in the hope they might be cured of ailments great and small.

And there are communities too, some far away from the riverside, of Orthodox Old Believers. In one village called Tavlinka there are about 600 of them, the men heavily bearded, the women modest and devout, the children numerous, the attention to the holy book complete.

And then the river spills muddily and slowly



out of its great estuary, into the Sea of Okhotsk. The few shipyards stand idle. A cluster of rusty freighters from Pakistan and North Korea wait for stevedores to load cargoes. A few miles across the Tatar Strait is Sakhalin Island. Chekhov went there once, to write a book about its prisons. The difference today is that geologists have found oil off Sakhalin, and there are Americans there, and the island has a promising economy. The plains of the lower Amur are by contrast dismal and ugly and poor, deservedly forgotten by most.

"Why are you going there?" the woman at Domodedovo Airport had asked me. I could see why. The Amur is a river that begins mighty pretty, but one that becomes pretty mighty and ends downright ugly.

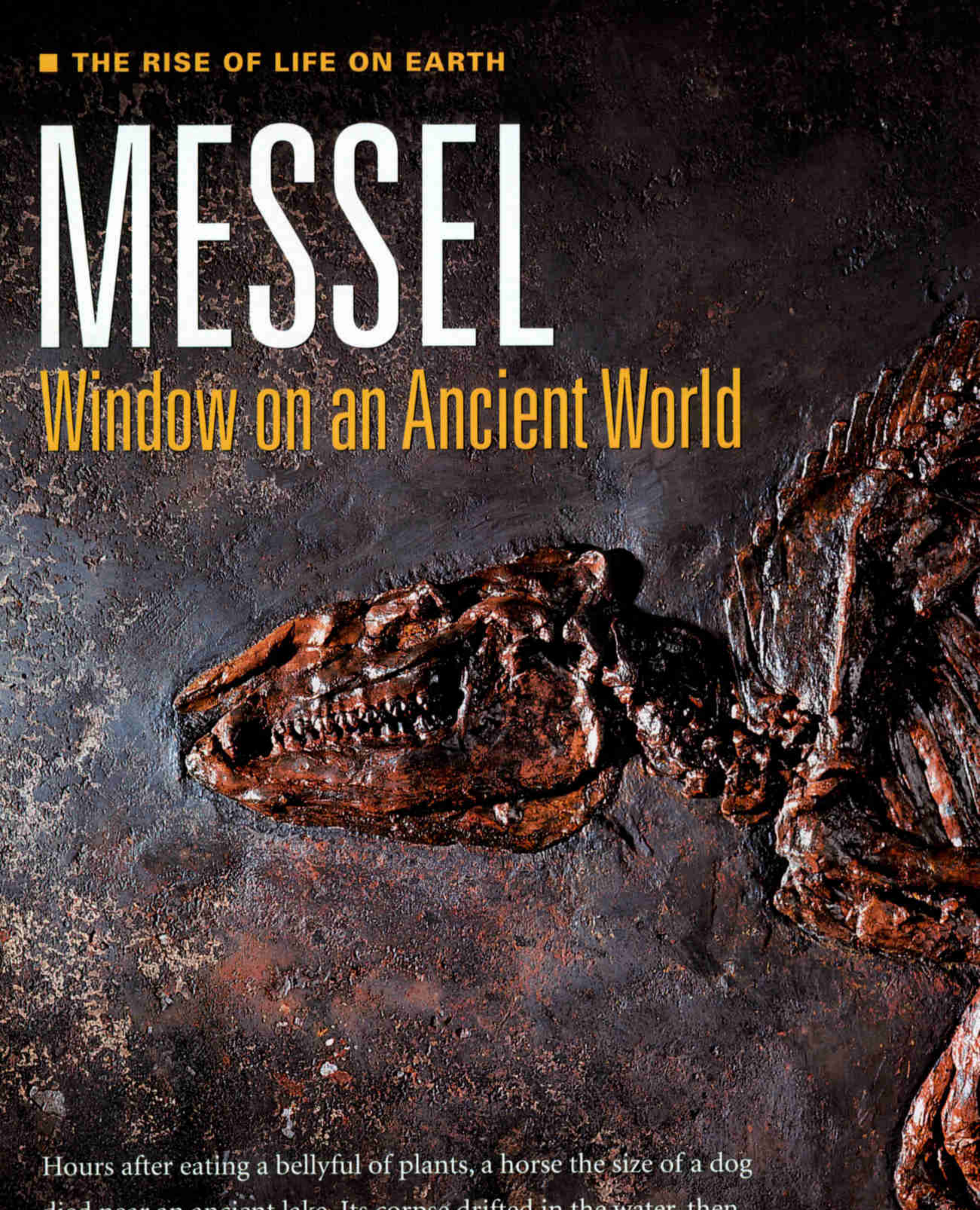
The Amur I had seen through the Chinese telescope all those years ago separates an impoverished and corrupt and troubled outpost of Europe from a rich and assertive part of the ancient nation that stands at the very heart and soul of Asia. And from this the Amur derives its importance for the foreseeable future.

The Amur is a river at a pivotal point of a region that is about to be of great geopolitical interest. Ignored and forgotten by most of the world, the Amur is at long last a river of gathering significance. It is going to be a river in the headlines; it is going to be heard of and remembered. The Amur, or the Black Dragon, is, in short—and for perhaps not the very best of political reasons—a river whose time has come. A river to be watched, and watched with care. □

■ THE RISE OF LIFE ON EARTH

MESSEL

Window on an Ancient World



Hours after eating a bellyful of plants, a horse the size of a dog died near an ancient lake. Its corpse drifted in the water, then slipped quietly to the bottom. Forty-nine million years later the horse's remains—down to the last meal in its gut—were found in an abandoned mine pit in the German town of Messel, source of some of the world's most extraordinary fossils.

PROPALAEOTHERIUM HASSIACUM, 3 FEET LONG,
STATE MUSEUM OF NATURAL HISTORY, KARLSRUHE



New Mammals on the Block

Hand of fate: The right hand of a primate (left), recognizable to paleontologists by its opposable thumb and broad fingertips, signals a biological revolution—the ascent of mammals. Messel's fossils date from 49 million years ago, in the Eocene epoch, a time when new mammals evolved and occupied new territories. Many of today's familiar mammals—primates, horses, bats, and rodents—make their debut in the fossil record not long before they appear here. And nowhere are the newcomers captured in such detail. The outline of fur that once covered a tree-dwelling rodent (right) surrounds its bones in a dark halo.

EUROPOLEMUR SP., 2 INCHES LONG, SENCKENBERG RESEARCH INSTITUTE, FRANKFURT (LEFT); *AILURAVUS MACRURUS*, 27.5 IN LONG, HESSIAN REGIONAL MUSEUM, DARMSTADT

By HILLEL J. HOFFMANN
NATIONAL GEOGRAPHIC EDITORIAL STAFF

Photographs by JONATHAN BLAIR

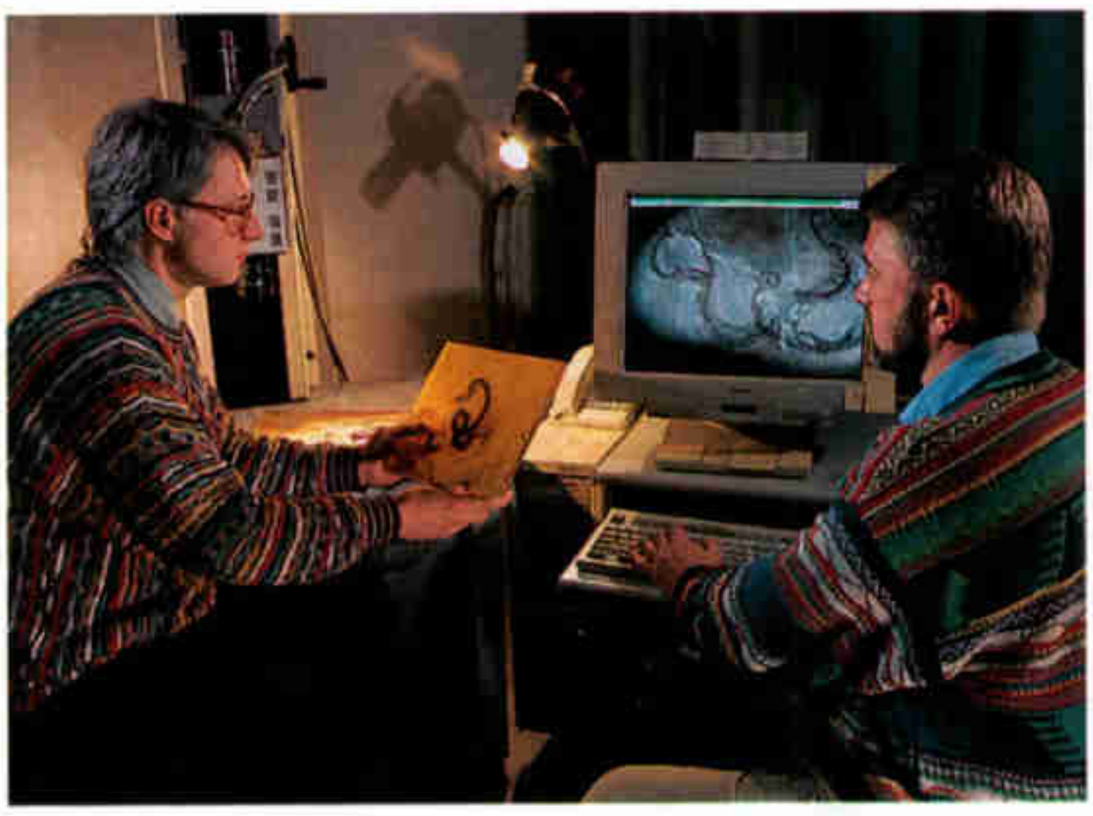
It takes 30 minutes to drive from downtown Frankfurt to the Messel pit, a bowl-shaped depression flanked by train tracks and a garbage-processing plant. The pit is quiet now. A handful of huts stand where bucket dredges and tracked vehicles once hauled out oil shale. A guard patrols a perimeter fence—the only clue that Messel still produces anything of value.

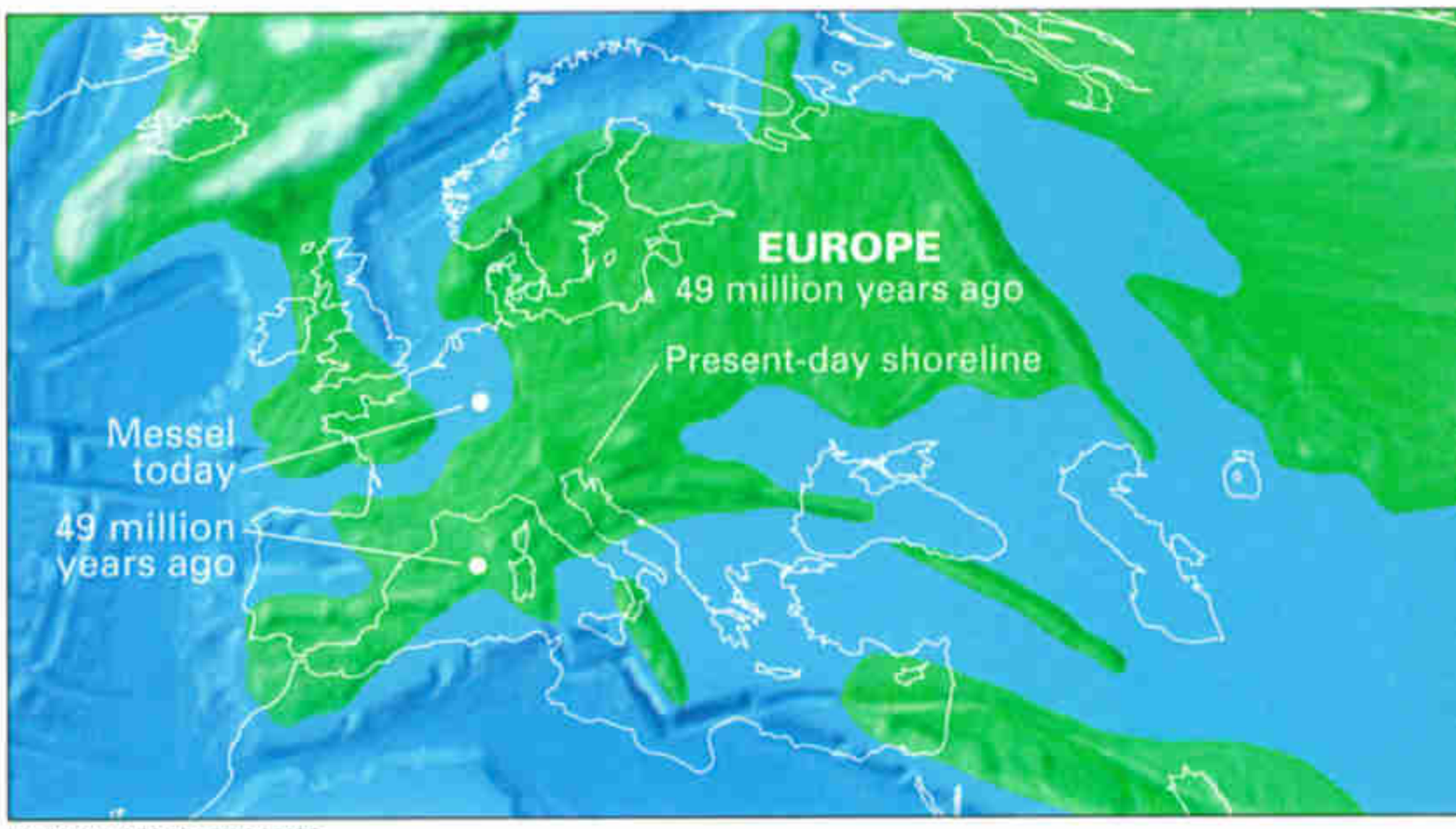
Tens of thousands of fossils have been unearthed here. They've survived air raids (specimens were stashed at scattered locations during Allied bombings), poachers, and an attempt to convert the pit into a trash dump. In 1995 the pit earned the protection of the United Nations when UNESCO declared Messel a World Heritage site. At Frankfurt's Senckenberg Research Institute Stephan Schaal (right, holding a snake fossil) and Jörg Habersetzer are creating a digital catalog of the finds.

Messel captures a critical moment in the history of life on Earth during the Eocene, or "dawn of new times." Europe was an island (map), and the mining pit was covered by a lake. A mass extinction had killed off dinosaurs and thousands of other species 16 million years earlier, clearing the way for the explosive diversification and dispersal of mammals. At Messel, paleontologists get their first good look at some of the new arrivals in their evolutionary youth. Messel's horses, for example, look little like their living relatives. They're elfin leaf browsers—with multiple hoofs on each leg—not yet adapted for life on the open plains.

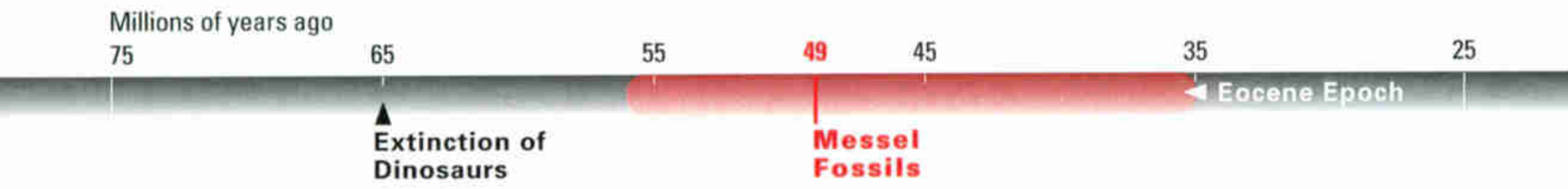
The Messel fossils are renowned for their state of preservation. Most fossils in museums are assembled from isolated bones and teeth. To reconstruct an animal's diet, behavior, or posture, researchers rely on educated extrapolation. Not at Messel, where many fossils are found whole, in repose, as if the animals had curled up in the rock for a nap. Even soft tissues are sometimes preserved as dark outlines. Gerhard Storch, a paleontologist at Senckenberg, points to a fossil of a hedgehog-like mammal covered with coarse hair. "I feel like I'm working with living animals," he says, shaking his head in wonder, "not just old bones."

JONATHAN BLAIR photographed fossils from the Devonian period for the May 1999 issue.





NATIONAL GEOGRAPHIC MAPS
SOURCE: CHRISTOPHER R. SCOTESE, PALEOMAP PROJECT; RELIEF BY TIBOR TÓTH, ADAPTED FROM ORIGINAL ART BY RALPH SCOTESE.







The Treasure Pit That Nearly Became a Garbage Dump

Patches of oil shale are visible among the shrubs that reclaimed the pit after mining was phased out in the 1960s. For 90 years miners took the rock to kilns—where it was burned to produce hydrocarbons—leaving a crater a thousand yards wide. The rock feels moist; it's 40 percent water and 15 percent decayed aquatic algae. Dead algae rained to the bottom of the ancient lake after seasonal blooms, creating thin layers in the sediment. Workers look for fossils by breaking open the layers like pages in a book. Most pages are blank; empty slabs are thrown onto piles (left). If a fossil is found, it's stored in water—the rock crumbles if it dries. To preserve fossils, preparators transfer them to epoxy resin, which makes many specimens look like they're stuck in glycerin soap.

Miracles of Preservation At Messel even animals' most delicate structures—a bird's banded feathers (above), a frog's eyeballs (right), or the soft internal organs of a mammal (below)—are often visible as dark shapes in the rock. The shapes are made up of clusters of anaerobic bacteria, the only organisms that could live in the oxygen-depleted depths of the lake. They were fossilized after eating the animals' decomposing tissue.

MESSELIRRISOR SP., 3.7 IN WIDE, BEHNKE COLLECTION, ESCHBORN (ABOVE); *LEPTICTIDIUM TOBIENI*, 27.5 IN LONG, HESSIAN REGIONAL MUSEUM (BELOW); *EOPELOBATES WAGNERI*, 7.5 IN LONG, SENCKENBERG





An Ecosystem Locked in Time Hundreds of species have been recorded at Messel, providing a snapshot of an ancient ecosystem. A dense rain forest circled the lake. At dusk, animals emerged. Flocks of *Messelornis* (4) patrolled the forest floor. Many mammals—such as the primate *Europolemur* (1), the fruit eater *Kopidodon* (3), and the predator *Paroodectes* (9)—were adapted for life in trees. Fossilized gut contents allow



ART BY NATIONAL GEOGRAPHIC ARTIST CHRISTOPHER A. KLEIN AND MARK HALLETT

food chains to be reconstructed. Jewel beetles (10) ate pollen. Bats (2), hedgehog-like *Pholidocercus* (14), and long-legged *Leptictidium* (13) hunted insects. Tiny horses (12) browsed for leaves and fruit (one fossil has grape seeds in its intestines). *Messelobunodon* (5), an early deer relative, foraged for fungi. Primitive woodpeckers (8) ate fruit. Anteaters (6), unknown outside South America until discovered here, and pangolins (7) fed on termites and ants (11).

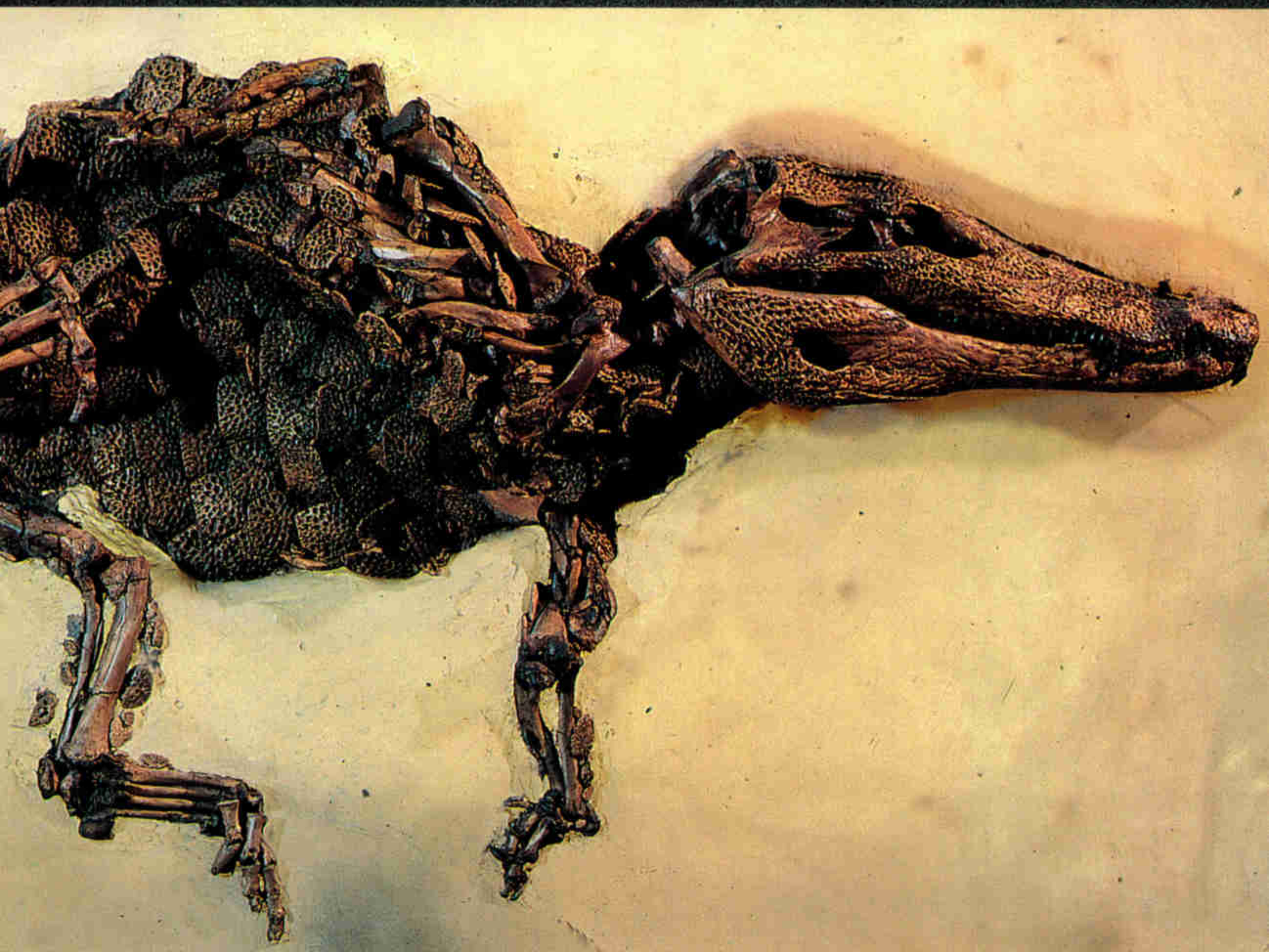
Lake Prowlers Ancient lake Messel was no Eden. Turtles (above) and other smaller creatures had to avoid crocodiles—at up to 13 feet long, Messel's largest animals. Some crocs (below) exploded during decomposition when gases built up in their guts, their armored plates crumpling like the wreck of a tank on a battlefield. Most crocodiles ate fish, supplemented by a windfall when a land animal fell into the lake. A crocodile tooth

ALLAEOCHELYS CRASSESCULPTATA, 7 IN LONG, STATE MUSEUM OF NATURAL HISTORY, KARLSRUHE (ABOVE LEFT);



has been found embedded in the bones of a primate; the animal was cut in two at the waist. The most common fish are bowfins (above), ambush predators whose relatives still prowl North American waters. Today bowfins are known to breathe air in gulps at the surface when dissolved oxygen levels run low. They can tolerate water that would kill other fish—more evidence that lake Messel could be a foul, inhospitable place.

CYCLURUS KEHRERI, 27.5 IN LONG, SENCKENBERG (ABOVE); *DIPLOCYNODON DARWINI*, 4.5 FT LONG, HESSIAN REGIONAL MUSEUM



Bat World

A bat lies shrouded in its shadow-thin flight membrane, even its ears imprinted. Rare at most fossil sites, bats have been dug up by the hundreds at Messel. Most seem to be healthy adults with full stomachs. What killed them? Bats seldom make fatal errors of performance. Some researchers think carbon dioxide gas from the lake knocked out the bats as they flew over the water. Others believe bats were poisoned by algae or snagged by thick algal mats when they dipped down to the lake for a drink.

PALAEOCHIROPTERYX TUPAIODON,
3 IN LONG, BEHNKE COLLECTION





Rulers of the Night

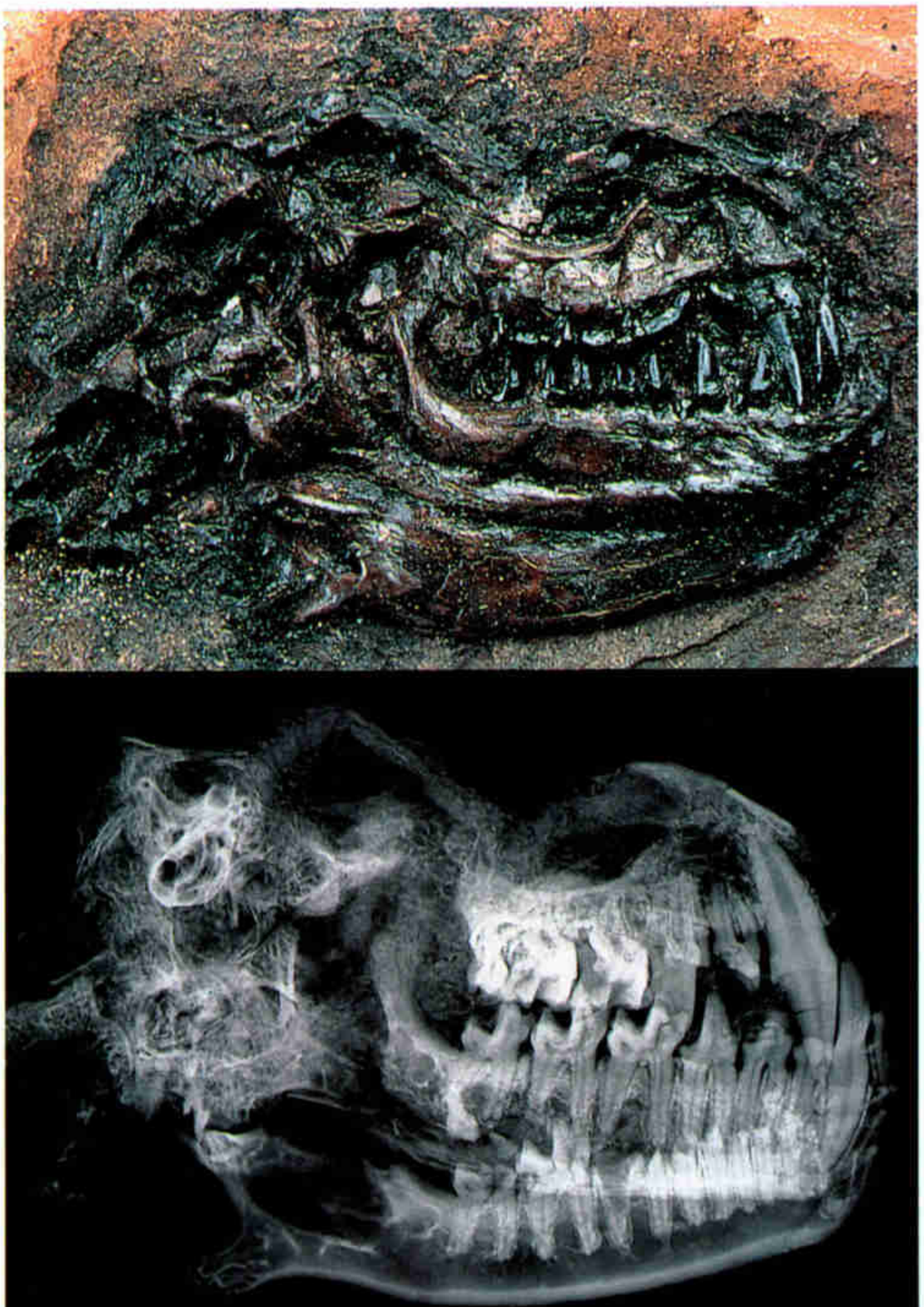
The daily lives of many modern bats are still a mystery to biologists. But thanks to advanced imaging techniques and the preservation of gut contents and skin outlines, researchers have an astonishingly clear picture of the behavior of Messel's seven bat species, the oldest known community of bats in the world.

X-ray studies by the Senckenberg's Jörg Habersetzer reveal hidden details in the skulls of Messel's bats. Small spiral organs appearing as bright patches at the back of the skull (x-ray of *Hassianycteris* fossil skull, below) are cochleas, part of a bat's hunting arsenal. Today many bats use sonar to find nocturnal insects and avoid obstacles. Bats emit sounds that bounce off objects, reflect back to their ears, and travel to sensory hairs in the cochleas, creating a picture of the target with sound. Comparisons with modern bat skulls suggest that the Messel bats already had evolved primitive echolocation systems.

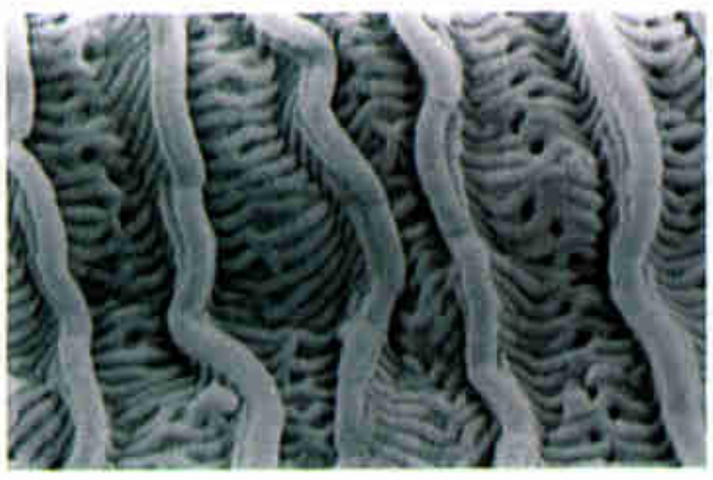
What did they hunt? *Palaeochiropteryx* ate moths and caddis flies. A scanning electron micrograph of a scale from a moth's wing in the stomach of a *Palaeochiropteryx* fossil (bottom left) looks much like the scale of a modern moth (bottom right). *Hassianycteris* ate a mix of insects, including beetles.

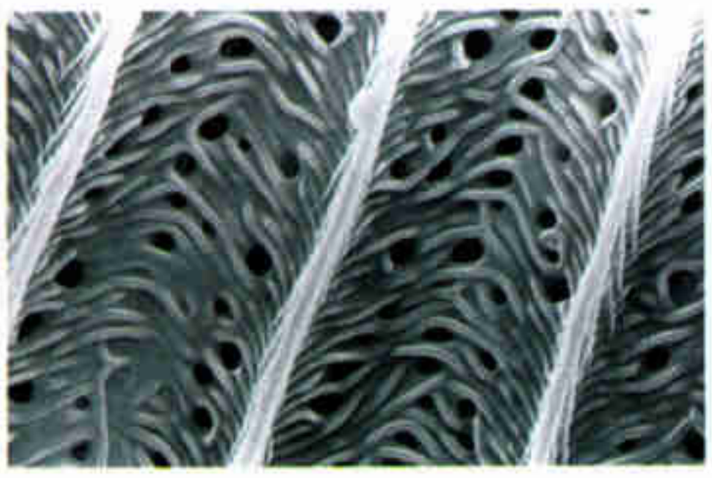
The outlines of bats' wings provide clues about how they shared their forest habitat. Narrow-winged *Hassianycteris* was a high-speed flier that hunted above the canopy. Compact *Archaeonycteris* was built for flying in the open air between the canopy and the understory. The slight body of *Palaeochiropteryx,* Messel's smallest bat, was dwarfed by its wings—perfect for tight cornering in the obstacle-filled world near the jungle floor.

Unlike Messel's horses, Messel's bats closely resemble their modern kin. "Bats were already advanced 49 million years ago," says Gerhard Storch. "I'm convinced they originated much earlier than you read in textbooks."



SKULL, 1 IN LONG, SENCKENBERG, JÖRG HABERSETZER; SCALES, GOTTHARD RICHTER AND SVEN BASZIO





Hothouse Flowers Fossils from some 60 families of flowering plants have been found at Messel. Their most fragile structures often survive: soft berries (above); pollen grains on a flower (below left); even the sheer, waxy coating on a legume leaf (below right), which glows green when bathed in fluorescent light. The modern relatives of many of Messel's plants grow only in the tropics, hinting at the site's warm climate during the Eocene.

TILIACEAE, SENCKENBERG (ABOVE); FLOWER, SPECIES UNKNOWN, SENCKENBERG (BELOW LEFT); LEGUMINOSAE, SENCKENBERG





Colorfast Sealed in darkness for millennia, the carapace of a stag beetle reflects the same metallic greens and blues that once helped it hide on the forest floor. Messel has produced hundreds of insect species, from ants with half-foot wingspans to flies the size of commas. Millions of cubic feet of oil shale remains to be excavated. What riddles of natural history will be answered when the next layer of rock is cracked open? □

LUCANIDAE, 2 IN LONG, SENCKENBERG



Lagging behind on Europe's road to prosperity, Albanians after communism find their options limited: either leave their native soil or stay and take their lumps—a legacy of poor leaders, poor luck, and poor economic decisions. Pushed to the brink by the war in Kosovo, Albanians at home and abroad are seeking the answer to a fundamental question: Can we turn things around?

By Priit J. Vesilind
NATIONAL GEOGRAPHIC SENIOR WRITER

Photographs by Alexandra Boulat



With flowers and cautious smiles, young Kosovar Albanians come out of hiding to welcome NATO peacekeepers on the road to Priština. Behind them burns a bonfire of revenge—a Serb house, torched by Albanians.

ALBANIANS

A PEOPLE UNDONE



Undercover cop, *a policeman makes a "routine" traffic stop on a spring morning in the town of Korçë, Albania, after shielding his identity to avoid reprisals from locals connected with organized crime. He checks the driver's license and registration, then*



searches the vehicle for illegal weapons—remnants of the near-total breakdown in law and order that occurred in 1997, when Albania's economy collapsed and left a vigorous black market trade in drugs and small arms looted from government warehouses.



THE CONSPIRATORS HUSTLE through the airport at Los Angeles. The man wears a floppy tweed hat and carries a bulging briefcase. The woman strides beside him.

Robert De Niro: "What do you know about them?"

Anne Heche: "Nothing."

De Niro: "Precisely. They seem shifty. They seem standoffish. I mean, who knows from Albania?"

In the 1998 film *Wag the Dog,* Heche is a White House aide and De Niro a political spin doctor. They're trying to persuade a Hollywood producer to create a bogus war between the United States and Albania to distract the public from presidential wrongdoing.

To pull off the scam, they have picked as the enemy a nationality virtually unknown to Americans. For a fake news clip, the producer hires an actress to portray an Albanian refugee fleeing a computer-generated burning village.

But only a year after the movie was released, real Albanian refugees filled television screens. The United States and NATO fought a real war as Serb forces burned down villages and drove more than 800,000 Kosovar Albanians from Kosovo in a savage spring of ethnic cleansing.

Suddenly, we knew from Albania.

These war images posed many questions. What did the Serbs have against Albanians? Why do Albanians live in Kosovo? Who lives in Albania? What are Kosovar Albanians to those in Albania? Who are the Albanians anyway, and how did they arrive in the international spotlight in this sorry state?

In the Balkans, where victimhood sometimes passes for nationalism, Albanians have been classic victims, and they often seem incapable of describing themselves in other terms. I spent five weeks among Albanians last spring and summer—in Albania proper, in refugee camps, in Macedonia, Greece, Italy, in the Bronx—and I would ask:

"What are Albanians like?"

"We are oppressed by our neighbors."

"But what are your strengths?"

"We are strong to fight against the Serbs."

"Well, then, what are your weaknesses?"

"We have been made weak by outsiders."

Fine, I thought. I will try myself to put some flesh on that stubborn skeleton.



At their best, Albanians are generous, loyal, and remarkably stoic. In muddy, squalid Kukës, Albania, where thousands of Kosovar refugees huddled their tractors and farm wagons together in an impromptu camp, a farmer told me, "My father always said that each generation of Albanians can expect their war. I guess this was ours."

The Albanians have always been an obstinate people who raised large families, in part because each expected to lose a few sons to blood feuds or wars against invaders. Perhaps their most consequential trait has been a pragmatic, almost casual, approach to religion. "The faith of Albanians," wrote Vaso Pasha, a 19th-century Albanian poet, "is Albanianism."

The Albanians are a Mediterranean people, probably descended from Illyrian tribes whose mythology is intertwined with classical Greece and Rome. They are perceived as Muslims,

Europe's outcast, *Albania has lived on the rocky margins of history through a succession of empires—Roman, Byzantine, Ottoman—and a disastrous experiment with communism that ended in 1991. Villages like Kudhës, overlooking the Ionian Sea, cling to the soil with a stubborn grip.*



Living as a man *for the past 30 years, Pashkë (right) became a "sworn virgin" when the last male of her family died, leaving her to tend the family's name and property. Following the code in the* Kanun *of Lek Dukagjin, a 15th-century text that still governs life in much of northern Albania, Pashkë relinquished her womanhood and began dressing and functioning as a man in society.*

Near Laç (below) family and friends pay last respects to a man who was killed by police in Italy during a robbery. "These kids go abroad seeking work and can't find a job," says one expert. "The Mafia is always looking for recruits."





"There is this new aggressive part of society that has lost

but they were Christianized by Romans, and many have remained faithful.

In the 15th century, led by a legendary warrior-hero known as Skanderbeg, the Albanians revolted against the Islamic armies of the Ottoman Empire. But the Ottoman Turks prevailed, and many Albanians accepted Islam as the price of privilege. The Serbs, relegated to the hinterlands around Belgrade, saw—and still see—themselves as defenders of Christianity against the expansion of Islam.

Their defining national myth is the Battle of Kosovo, an Ottoman victory in 1389 that led to the empire's rule in the Balkans. The defeat remains embedded in Serbian hearts like shrapnel, and Serbian nationalism draws its passion from revenge. For Serbs the Albanians are the remnants of the hated Ottoman Turks, agents of Serbia's national humiliation. When Slobodan Milošević decided to rid Kosovo of its Albanian majority in 1999, it was with the apparent collusion of his people.

But what are Albanians doing in Kosovo, a part of Serbia, in the first place? They have their own country, don't they?

Yes and no. European powers imposed Albania's political boundaries in 1913 and left nearly half the Albanian population outside. So to Albanians "Albania" is where they have traditionally lived—in a continuous swath of the Balkans that reaches beyond political boundaries into Kosovo and other parts of Serbia, Macedonia, Greece, and Montenegro.

Many Balkan Slavs fear that this territory represents "Greater Albania," a future threat to Christian Europe and their own fragile nations. Albanians scoff. "Milošević has united Albanians for the first time," said Baton Haxhiu, editor of *Koha Ditore,* an ethnic Albanian newspaper in Priština, Kosovo's capital. "We must thank him for this, but we have no interest in changing any borders. For



its roots . . . trying to get rich very fast." —NERITAN CEKA, FORMER MINISTER OF THE INTERIOR

50 years Kosovo was divided from Albania. We have a different mentality now."

Albanians have been personally tough but historically weak. In 1878 they stood helpless as Russia defeated the Ottoman Empire and tried to hand much Albanian-inhabited territory to Bulgaria, Serbia, and Montenegro. Albanians held on to this land under Ottoman rule until after the Balkan Wars in 1913, when it was split up and they lost Kosovo to Serbia. Albania had become a sovereign state the year before, but then lost its autonomy during World War I. The country regained its independence in 1921, but the politician Ahmed Zogu hijacked democratic hopes four years later. He declared himself King Zog I and established a comic-opera state under Italian Fascist Benito Mussolini.

Italy seized Albania a few months before World War II began; Germany invaded later; civil war broke out between Albania's communist partisans, led by Enver Hoxha, and right-wing nationalists. In 1946 the Albanians of Macedonia, Montenegro, and Kosovo were folded into the new six-nation republic of Yugoslavia, cobbled together by communist Josip Broz Tito. At the same time Hoxha, promising national redemption, erected in Albania a bizarre regime that combined Ottoman backwardness, Stalinist brutality, and Chinese revolutionary paranoia.

The story of the Albanians has been their scattering—flights from invasion, despair, violence, or chaos. Each flight has taken something vital from the nation. There are roughly 8 million Albanians worldwide—population estimates vary widely—but only about 3.2 million live in Albania proper; 2 million are in Serbia; and Macedonia, Greece, and Italy are each home to hundreds of thousands. The rest are spread around the world, including the United States.

Albania should be the fatherland, but it has

been so abandoned and stunted that it no longer represents the center of Albanian aspirations. It's more the land of a sick uncle everyone's fond of, but he's currently in therapy.

ALBANIA WAS the most rigid and isolated state in Eastern Europe, the last to emerge from the past and the least capable of dealing with the future. "The communists killed the spirit of the people of Albania," said Pandeli Pasko, former Albanian ambassador to Italy. "They put the party over the national culture. Yugoslavia still had a window to the world. Albania had no window. It was closed in darkness."

Instead of roads Hoxha built countless concrete bunkers that still litter the landscape like fossil mushrooms. He left a population so out of touch with reality that many thought theirs was the most prosperous nation in Europe.

Memories of cruelty disfigure nearly every Albanian's heart. "My father had a car for 20 years," said Genc Tirana, a 43-year-old writer. "He kept it in the garage, because it was illegal to have a car. It was a Skoda. He would go start it up once a week, to keep it in good shape. And when the regime fell, he had a car. But then he died before he could drive it."

"When Hoxha died, everyone cried," said Ada Kongoli, a young lawyer in Tirana, Albania's capital. "Oh yes, we had to cry. If someone caught you not crying, you'd be arrested."

In case anyone forgets, Tirana's National Historical Museum will serve as a reminder. It puts the toll from Hoxha's political prisons at 17,900 jailed, 5,157 killed, 30,383 exiled.

Recovery has been desperately difficult. Neritan Ceka, an archaeologist and former minister of the interior, said: "There is this new aggressive part of society that has lost its roots, coming from the provinces, fighting to survive, and trying to get rich very fast."

The channel between Italy and Albania is thick with smugglers hauling prostitutes, narcotics, and illegal refugees. Officials say Albania is the western terminus of a "Balkan route" of drugs from southwest Asia that accounts for an estimated 80 percent of the drugs moving into Western Europe.

"We did not invent organized crime," said Ermal Hasani, a political analyst in Tirana, "but in our society there is enough of a vacuum to implement it in a perfect way."

A Western-backed heart surgeon, Sali Berisha, became president of Albania in 1992, and the nation seemed to pull itself together. But not for long. Naive in capitalism, clever in corruption, the new government supported a group of financial pyramid schemes that sucked in about 50 percent of Albanians.

When the schemes, and people's life savings, collapsed in 1997, a full-scale revolt erupted. For weeks Albanians ran riot. They ransacked military barracks and stole weapons that later armed the Kosovo Liberation Army (KLA). Five years of stuttering capitalism crashed.

"It was not a war," said Genc Tirana, the father of two, "but I took a gun and some bullets, and I went to protect my family."

By spring of 1997, about 1,500 had died in the violence, and Berisha was toppled. But the new socialist government also struggles with Hoxha's legacy. Trash infests the streets, graffiti stains public buildings, huge but silent factories rust. Most of the bright and talented have left; many intellectuals are holed up in Paris or Rome. There is a strange medieval feel to the country, and the bizarre notion that the roads are blocked—that there is no escape.

"People still treat the world outside their home as the enemy," said Ceka. "If you go into a house, you will find Europe there. Everything is clean; you have books and computers. Go outside and you find central Africa. But we are not in Africa. We are in Europe, like a sandwich. We are condemned to be civilized."

The Kosovo crisis mercifully interrupted Albania's self-destruction. "Kosovo gave us the sense of a national calamity," said Genc Pollo, a young Democratic Party activist, "and the political fight was set aside for a while."

When the communist regime collapsed in the early 1990s, life offered many Albanians a choice: become criminals or emigrate. Thousands spilled over the Greek border.

In Hoxha's time Albanians patrolled the Greek border with a jailer's efficiency, so Greece was not prepared for the intensity of the influx. Now corruption makes control of immigration nearly impossible for the Greeks. Albanians can buy a visa for 180,000 drachmas ($564), often several times under different names—a system that creates a barrier for the poor and a revolving door for criminals.

Albanians make up more than 50 percent of the 700,000 aliens in Greece. Many are

Greece is good, *says guest worker Ilia Demiri, a 28-year-old welder from southern Albania who's found everything he needs in Thessaloniki: a factory job, a girlfriend, and a dream for the future. Such gains are hard to come by in Albania, where a stagnant economy drives thousands of unemployed into neighboring countries every year, many of them illegally. In Macedonia, a shepherd watches rain sweep over Tetovo, an Albanian enclave.*

Honoring their history—*and those who made it—schoolchildren gather at a memorial in Kukës (right) for a tribute to Albanian martyrs of World War II. Italian and German occupation turned Albanians into fierce antifascists, and when the war ended, they embraced communism, led by maverick Enver Hoxha. Rejecting the Soviet system in 1961, Hoxha forged an alliance with China; when that failed in 1978, Albania plunged into a repressed isolation. Yet Albania never lost its religious tolerance: At the Church of St. Antoine in Laç (below) Muslims and Christians alike throng to touch the wall, believed to bring good health.*





Albania was the most rigid and isolated state in

illegal and in constant fear of deportation.

Greeks are not generally sympathetic to Albanians. Although a NATO member, Greece didn't participate in the bombing of Serbia. Greeks demonstrated against the air strikes and organized benefit concerts for the Serbs, who share their Eastern Orthodox religion.

A Greek friend in Athens claimed a liberal attitude toward Albanians but expressed only dark thoughts about them. "The police blotters are so filled with Albanian names, you wonder if there is something in their national character that makes Albanians criminals," he said. "They work as delivery boys and farm laborers or in construction—in positions where you don't have to let them into your house."

He knew many well-educated Albanians, but they were all underemployed.

"I have an Albanian cleaning lady with a university degree in chemistry," he said. "Her husband is a lawyer back in Albania."

Official Greek statistics do not bear out the dire perceptions. Even though many Albanians live in extreme poverty in Greece, the crime rate among Albanian immigrants is about the same as for native Greeks.

Greece and Albania have long bickered over land. Greeks call the southern part of Albania North Epirus. A small ethnic Greek population lives there, as well as Albanians who have embraced Orthodoxy. The Greeks consider these ethnic Albanians Greeks.

Albania conducted its own ethnic cleansing in the mid-nineties. It harassed Greeks and drove them from their homes in order to repopulate the area with Albanians.

Kostas Natsios, an Albanian citizen of Greek extraction and a teacher who lived in the disputed area, recalled: "My family was robbed twice, tied up, and all our valuables stolen."

Even with an education and a Greek name, Natsios is relegated to the underclass in Athens.



Eastern Europe, the last to emerge from the past.

"In Albania I was a damn Greek, and in Greece I'm a damn Albanian. I'm like a tree without flowers or leaves. I'm looking for a homeland for my children, so they will not suffer. But Hoxha created fear in us, and it's in us permanently, like bone marrow—and it will be with us for the rest of our days."

FOR MORE THAN 500 years Albanians have fled to the Italian peninsula, their protector, helper, and sometime neighborhood bully. The Italian coast is only 45 miles across the Adriatic Sea, and during communist times some Albanians received Italian TV broadcasts, which sustained them with glimpses of grace and consumption.

In the 15th century thousands of Albanian Christians fled across the Adriatic, even as the Albanian warrior, Skanderbeg, repulsed Turkish invaders. These first Albanian refugees, called Arbëresh, established about 50 villages—most of them still intact—in Sicily, Calabria, Campania, and Puglia.

Through the centuries the Arbëresh contributed a pope, three cardinals, and the prime minister and statesman Francesco Crispi to Italian life. They preserved Albanian culture during Ottoman rule, and their scholars were among the first to codify and write the Albanian language.

From Italy, Albanians spread throughout the world. In 1929 Giuseppe DioGuardi left the Arbëresh village of Greci for the Bronx, New York, and opened an Italian grocery. His oldest son, Joe, thought he was Italian. Only when he became a U.S. congressman did Joseph DioGuardi learn about his past. "My father was a simple man. He never told me," said DioGuardi. "He used to speak to his sisters and parents in this strange language, and I thought it was just an Italian dialect."

DioGuardi picked up the Albanian banner

in the mid-eighties and became the point man for the aroused Albanian community in the New York City area. Last April his Albanian American Civic League helped send off the Atlantic Brigade of 385 Albanian Americans who fought in the KLA.

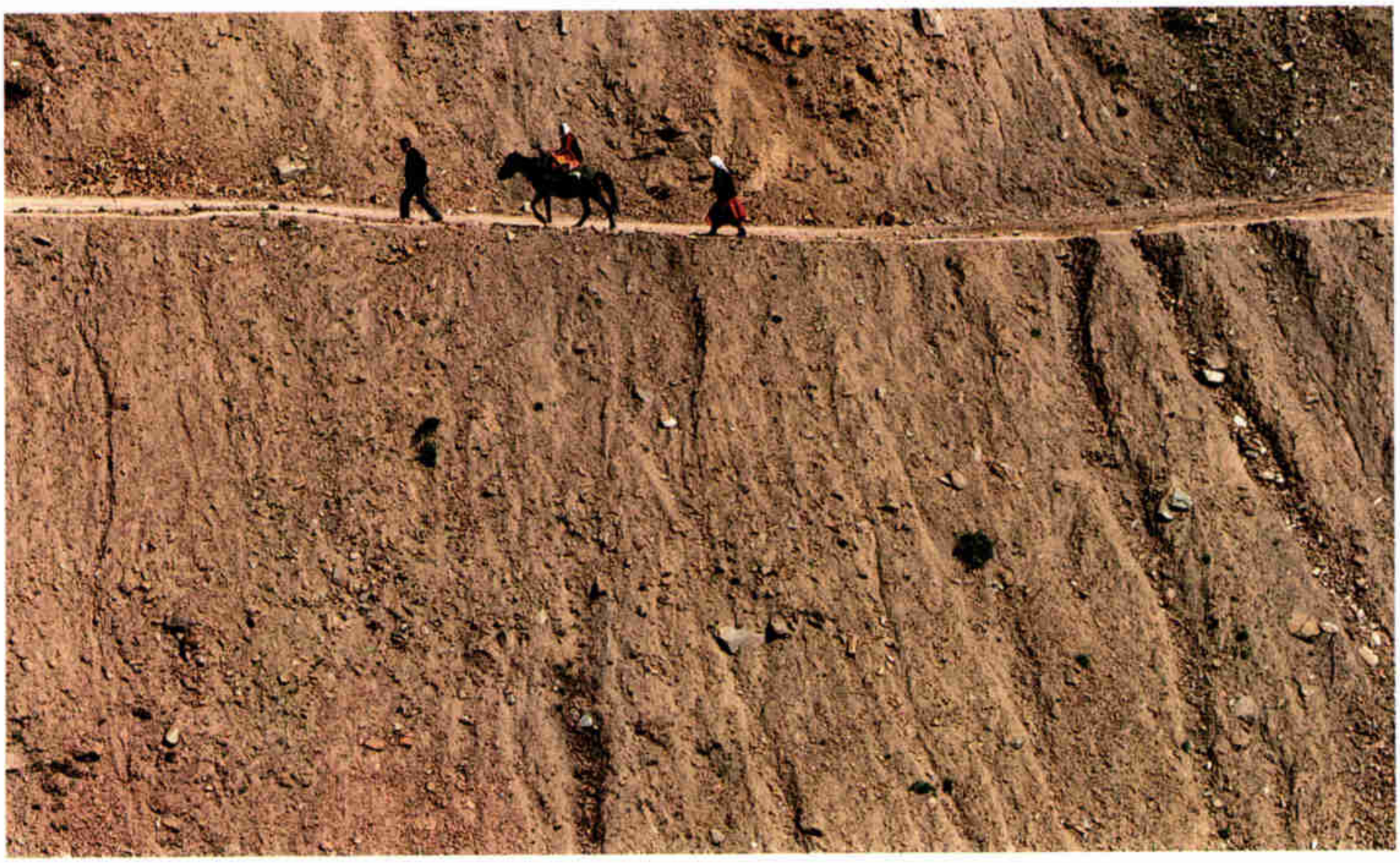
DioGuardi and his wife, Shirley, offered to accompany me back to Greci, a somnolent village among the golden wheat fields of Campania. About the only Arbëresh-Albanian DioGuardi remembers is *"Gjaku i shprishur,"* which means, approximately, "Our scattered blood." But it was a magic greeting, enough to light up many eyes and get DioGuardi a bear hug from Giovanni Pucci, a retired grocer who shares a great-grandfather with him.

"I may be an American, with both parents from Italy," DioGuardi said, "but I now have an Albanian heart."

PERHAPS THE ALBANIAN HEART burned brightest in Yugoslavia. During the final years of Tito's rule ethnic groups had equal rights—all were Yugoslavs and could travel abroad. Thousands of Yugoslav Albanians have worked in Western Europe since the 1960s, and their wages helped keep Yugoslavia solvent.

After Tito's death in 1980, Macedonia and Montenegro at least tolerated their Albanian communities. Serbia turned on them. Milošević canceled Kosovo's autonomy in 1989 and placed Kosovar Albanians on the margins of society, although they were the vast majority. He removed them from positions of authority, denied them good jobs, and virtually shut down Albanian education. In the early 1990s he pressed young ethnic Albanians into the Yugoslav Army. "Because you were Albanian," a young refugee in Zurich, Switzerland, told me, "they put you in the front lines. . . . There were dead Albanian boys arriving back in Kosovo. So I fled."

To cope, Kosovar Albanians erected a parallel economy and social institutions but could not pay the bills. Some 350,000, mostly young men, left for Western Europe in the 1990s. Many were responsible for their families' welfare, and if they could not find work, they turned to crime. For years, Kosovar Albanians reportedly controlled the illegal drug market in Switzerland, Germany, and Austria.



Spring cleaning: *Valbona Parllaku of Novoselë (right) celebrates St. George's Day in typical Albanian fashion—by bathing her brother, Arian, in river water and flowers, then rubbing him with an egg for luck. In the mountainous north life creaks along at a medieval pace—"too sleepy here for me," says a teenage girl from Shkodër.*

Their streets in ruins *and strewn with shards of hate, the ethnic Albanians of once thriving Đakovica in Kosovo survey the wreckage of buildings leveled last April by Serb forces several days after NATO air strikes began. Nearly two million ethnic Albanians lived*



in Kosovo before the war, with a standard of living higher than that of Albania. Today much of Kosovo is a wasteland of ghosts and shattered dreams. Though many driven from their homes last spring have returned, it will take years to rebuild the province.



The drain of energy and talent handicapped Kosovo, but the successful returned home in fancy cars with a new capitalist mentality and enough money to build new houses, stirring envy into the pot of Serbian grievances.

In Macedonia, Albanians live better than they do in Kosovo and Albania—in fact, some have become wealthy. Not all are Muslim. Mother Teresa of Calcutta, for example, was born Agnes Gonxha Bojaxhiu into a Roman Catholic Albanian family in Skopje.

But even in this nation, where they constitute at least a quarter of the population, Albanians are subject to discriminations from banal to odious. They serve as ministers in the government but at times have held only 4 percent of state jobs. In the past police crushed attempts to legalize an Albanian-language university in Tetovo, one of Macedonia's largest majority Albanian cities.

The ethnic divide was guaranteed when Macedonia gained its bloodless but tottering independence in 1991 and did not accept Albanians as equal, founding partners. Albanians thus became the large but troublesome minority of a Slavic state.

"When this was Yugoslavia, we were a legitimate nationality with rights," said Artan Skenderi, a television director in Tetovo. "Now we have been depicted as a dangerous and inflammatory race, and the Albanian people are under great pressure. Every Albanian feels that under his skin."

During the recent flight of Kosovar Albanians from Serbian terror, Slavic Macedonians greeted them with widespread fear and hostility, closing their doors, boarding windows. Macedonia's ethnic Albanians took 150,000 refugees into their homes.

Strategists feared global war if the Serbs attacked Kosovo. They thought Macedonian Albanians would join the defense. Then Albania itself would be obliged to enter, drawing in Greece and Bulgaria. Turkey would interfere to offset Greece, its regional rival.

But the Macedonian domino did not fall in 1999, due in great part to the discipline of Albanian leaders there. At the border camp of Blace, Macedonian authorities virtually imprisoned the first wave of 50,000 Kosovars last March. They left them with little food and few sanitary facilities and denied access to



Rich in grains, *Albania's Korçë Plain (right) is a southeastern valley that was collectivized under communism and made productive. But when lands were haphazardly redistributed after 1991, yields plummeted. Today even the outskirts of Tirana provide grazing (above). "It's not so easy," says one man, "to change from one system to another."*



Life returns to the streets *of Prizren, where Kosovar Albanian kids joke with German NATO troops. After years of isolation, many in Albania also welcome such contact with the West. "This is a very historic moment," says a government official. "It's a dream of centuries for Albanians to be integrated into Europe."*

international aid workers for days. Yet I saw no signs of radical Albanian politics or recruitment by the KLA in the Macedonian camps.

In Tetovo, though, they will remember Blace with bitterness. At the Arbi café, a watering hole for thinkers and agitators, I met up with Baton Haxhiu, the editor from Kosovo. "They fear us," he mused. "But Macedonia is in a very fragile state. If Albanians really wanted to destroy Macedonia, we could do it, in two days."

When I was in the Macedonian refugee camps of Stankovac, I found four boys, perhaps four years old, playing among the stones that surrounded the tents. One reached down and picked up a handful. "I'm going to give these to NATO when they come," he said to his buddies, "and we will kill the Serbs."

Many ethnic Albanians returned to Kosovo with rocks in their hands. They murdered Serbs, guilty and innocent, burned houses, and desecrated Serbian Orthodox churches. Some 170,000 Serbs, three-quarters of Kosovo's prewar population, fled the acts of vengeance. Kosovar Albanians worry about the traumatic effects of the war on their children, that their anger will lead to more violence.

"Albanians now see the light at the end of the tunnel.

Can Serbs and ethnic Albanians live together in Kosovo? "Never again. Impossible," said Mehmet Shezai Shehu, a former Kosovar Albanian schoolteacher, at a Stankovac camp. "Milošević didn't kick us out. The Serbian people did. It was a neighbor of mine who put on a uniform and knocked on my door and said, 'Leave. I give you 15 minutes to leave.' "

Despite the grief and devastation, Kosovo doubtless will be a Kosovar Albanian jurisdiction, and Albania's most able people will be in Priština, not Tirana. But Albania itself will profit from the Kosovo crisis. Last spring more than 400,000 refugees, 10 percent of the entire Albanian population, arrived suddenly on its borders. And even Albanians who were dirt-poor embraced them like brothers. Villages and families took in total strangers. Gjaku i shprishur—our scattered blood.

This generosity and the Albanian government's close cooperation with NATO forces should aid in rebuilding the nation's infrastructure and providing security. "With American help," I heard more than once, "we can hope to lead normal lives."

Pandeli Pasko, the former Albanian ambassador to Italy, summed up: "Albanians now see, for the first time, the light at the end of the tunnel. They see that the world sees them. And they all realize in their hearts that something is about to happen, that the Albanian nation will be reborn."



They see that the world sees them." —PANDELI PASKO, FORMER ALBANIAN AMBASSADOR TO ITALY

Meanwhile, in the Albanian seaport of Vlorë, known for its irascible population, mobsters' turf wars are filling up cemeteries. The night before I arrived there, three men had been assassinated. I sat with Zenepe Luka, a journalist, at a seaside café.

"Some say that Vlorë would be quite beautiful if it weren't for its people," she said, tongue in cheek. "But a policeman takes a bribe mostly because he's poor." Vlorë plays rough. When Luka wrote an article critical of the Democratic Party in 1998, someone bombed her home, wounding her son and daughter.

Luka took me to a hillside olive grove, to what seemed like a cemetery of the young. Among the plastic flowers that swaddled gravestones were portraits of kids holding soccer balls or wearing party dresses. There was a special memorial for 90 people who drowned in a refugee-boat accident near Otranto, Italy, and one for those who died in civil violence. Three fresh graves held the young mafiosi gunned down just two days earlier.

"We don't have any young people who die naturally," said Luka, wearily.

"Hey, hey," a woman shouted from behind a fence. She had recognized Luka. "I saw you taking pictures of dead people. But they're dead. We're alive! And we don't have any water in this neighborhood. Why not? I'm pregnant, and my husband is in Greece. Write about that!"

They're dead, we're alive. That may be the only fit benediction in the land of the Albanians, and it may be enough. □

Get an interactive map of the region and hear Priit Vesilind's field dispatches at *www.ngnews.com/kosovo.*

EYEWITNESS

KOSOVO

Article and photographs by Alexandra Boulat SIPA

"It began in Kosovo, and in Kosovo it will end up."

Those words, spoken in 1991 by a Slovenian photographer friend named Futy and referring to the Balkan conflict, came back to me the day the NATO air strikes began last March. I was in Priština, the Kosovo capital, where Serbian paramilitary gangs were roaming the streets, taunting the ethnic Albanians and beating people at will. Everyone knew that the time for compromise had passed and that a cruel war was on its way. So Futy had been right, I thought. The fighting has finally come back to Kosovo.

When I met him nine years ago, Futy had caught a glimpse of the old rivalries boiling beneath the still waters of formerly communist Yugoslavia. They had surfaced in this small province, home to some two million people (90 percent ethnic Albanians) and part of Serb-dominated Yugoslavia.

Under communism Kosovo had enjoyed a measure of autonomy from the central government in Belgrade. But Serb nationalists always regarded Kosovo as a cradle of Serbian culture, and in 1989 the leader of Serbia's Communist Party, Slobodan Milošević, decided to crack down on Kosovo and rescind its autonomy. When the population rose in protest, the government sent in troops to support the police. More than 20 people were killed and hundreds were brutalized in violence that lasted for months.

One of the few photojournalists to cover the confrontation, Futy had his teeth kicked out during one of the riots. He remained toothless from then on, but that didn't stop him from laughing madly, like a little demon, at the surreal quality of the war that was unfolding in the Balkans.

I got a bellyful of that war in the years that followed, and I witnessed the same insanity over and over as the Serbs tried to maintain their hold on the republics breaking free from Yugoslavia: first Slovenia, then Croatia, then Bosnia. Along the way my view of humanity became darker and more

Račak, central Kosovo, February 11, 1999. Funeral of Kosovar Albanians killed by Serbian forces.

Hopes for peace faded when Serbian security forces, searching for insurgents, killed dozens of civilians at Račak—an event that finally focused the world's attention on Kosovo. Weeks later authorities released 40 bodies for burial.





Račak, February 11, 1999. A village drowned in grief.



I was there with the families when the bodies of their loved ones—including a woman and a 12-year-old boy—came back from Priština, where the government had taken them for autopsies. During the funeral I witnessed an outpouring of grief that will be with me forever. The wails of agony drowned out all other sounds.



complicated. After seeing the atrocities committed by Serbian troops at Vukovar, Croatia—and those of Croatian forces in retaliation—I became fully aware of the presence of evil on Earth. And Bosnia was even worse, like a huge mouth that ate people. Sarajevo, in fact, is where Futy vanished in 1993 after he was captured by a Serbian patrol. There was no reason for him to be killed, but I know that he was, because that's the way things are here. His body was never found.

I went into Kosovo in the spring of 1998, just after the big massacre of Kosovar Albanians at Likošane—the first in a series of attacks launched to eliminate Kosovo Liberation Army (KLA) "terrorists" but that often wound up killing innocent men, women, and children. Traveling mainly on back roads to avoid the fighting, several colleagues and I bounced from village to village, covering the madness—and a sad succession of funerals.

In the forested hills of Drenica, a KLA stronghold, we found thousands of Kosovar Albanians who had been driven from their homes, entire families with their children living in tents patched together from branches and pieces of plastic. Many of their menfolk were off fighting the Serbs, and those in the forest—mostly teenage boys and old men—were also preparing to fight. They were sewing on patches bearing the two-headed eagle of the Albanian flag and arming themselves with smuggled Kalashnikovs.

The massacre that finally outraged the world was in January 1999 at Račak (page 73), where Serbian forces slaughtered some 40 people. After covering the aftermath of that tragedy, I saw the brutality of the Balkans with a new and terrible clarity. If your country hasn't been through a war, you can watch the sanitized version on TV and think that the world is basically a good and decent place. The people of Račak can tell you otherwise.

Two months later, when peace talks finally unraveled and NATO was forced to carry out its threats, I was one of the last journalists to leave Kosovo. I'll never forget looking into the desperate eyes of the Kosovar Albanians we passed on the road that day. They knew what our leaving meant: There were no longer any witnesses to the horror that was about to overtake them. Death was loose in the Balkans again, and I could almost hear Futy, the crazy man, laughing.

Paris-based photojournalist ALEXANDRA BOULAT has covered the Balkan conflict for nearly a decade. She is the daughter of renowned *Life* photographer Pierre Boulat.



Outside Gornje Obrinje, October 5, 1998. Bodies in the forest.

Near the ruins of Lanište I found some 200 people hiding from the Serbs, who had destroyed their village. Come, said a man, and he led me to a hut of branches and plastic. A five-month-old boy, his son, had died in the night. I watched as women lovingly washed the tiny body and wrapped it in plastic. Then an uncle (below) bore him to the woods for burial. Near Gornje Obrinje (above) family members found the bodies of two teenage sisters who were allegedly raped before they were killed.



The mountains of southern Kosovo, October 25, 1998. Burying the dead.



Studenčane, February 20, 1999. Serbs on patrol.



Allies of the Yugoslav Army, Serbian police in Kosovo did not like journalists, especially photographers. So I was shocked when a patrol invited me to accompany them. I climbed aboard, shot some film, and traded wisecracks for about an hour. Ironically, it was the only time during my year in Kosovo that I felt remotely safe.



Gornje Obrinje, October 24, 1998. A village in ruins.

Serbs torched his house, killed his family, slaughtered his cattle, and even stole his tractor, so now all the man above has left is his garden, thick with wildflowers. In the Balkans nothing is more surreal than the beautiful landscape, haunted by the ghosts of war. In the town of Kačanik (below) and scores of smaller villages the police would sweep in, arrest the young men, and force them into trucks as their families wept in fear: Would their next stop be the police station—or the grave?



Kačanik, March 3, 1999. The roundup of young men.



Rogovo, January 29, 1999. Bodies on display.

Suspecting ties to the Kosovo Liberation Army (KLA), Serbian security forces attacked Rogovo in western Kosovo and killed dozens of men, then allowed the press in to witness their investigation (above). In buildings nearby, international monitors found a cache of weapons that may have belonged to the KLA. When peace talks failed and NATO responded with bombs, it was clear the Serbs would punish Kosovo. But no one expected them to drive more than a million people from their homes.



Kosovo–Macedonia border, April 2, 1999. Forced exodus.



Kosovo–Macedonia border, March 30, 1999. Breakdown in a field.

Suffering stalked Kosovo's border with Macedonia, where this woman collapsed while her husband and children appealed to the border guards for help. After three days the family was given refuge in Macedonia. Most Kosovar Albanians have now returned home to a land where NATO troops keep a shaky peace. □

Nestled once more in the heart of the forest after two years in a zoo, an infant gorilla, whose mother was killed by poachers, feasts on leaves in Gabon. A pioneering project is sending such orphans back to their natural homes.

Central Africa's Orphan Gorillas

WILL THEY SURVIVE

IN THE WILD?

By MICHAEL McRAE

"*BONJOUR LES BÉBÉS, BONJOUR!*" The voice of Judy McConnery rang out in the shadowy light of the ramshackle dormitory cabin. Four eager faces appeared at the bars of a rough-hewn nursery cage, and eight hairy arms reached through the barrier of wooden poles. The quartet of babies raised a chorus of imploring whimpers: gorilla talk for "Gimme!"

"They sing for their morning bread," McConnery said, laughing as she distributed morsels of baguette to the infants. On the other side of the shack's interior wall, seven gorillas, ranging in age from four to eight years, were stirring in anticipation of their breakfast of milk, bread, and tropical fruit.

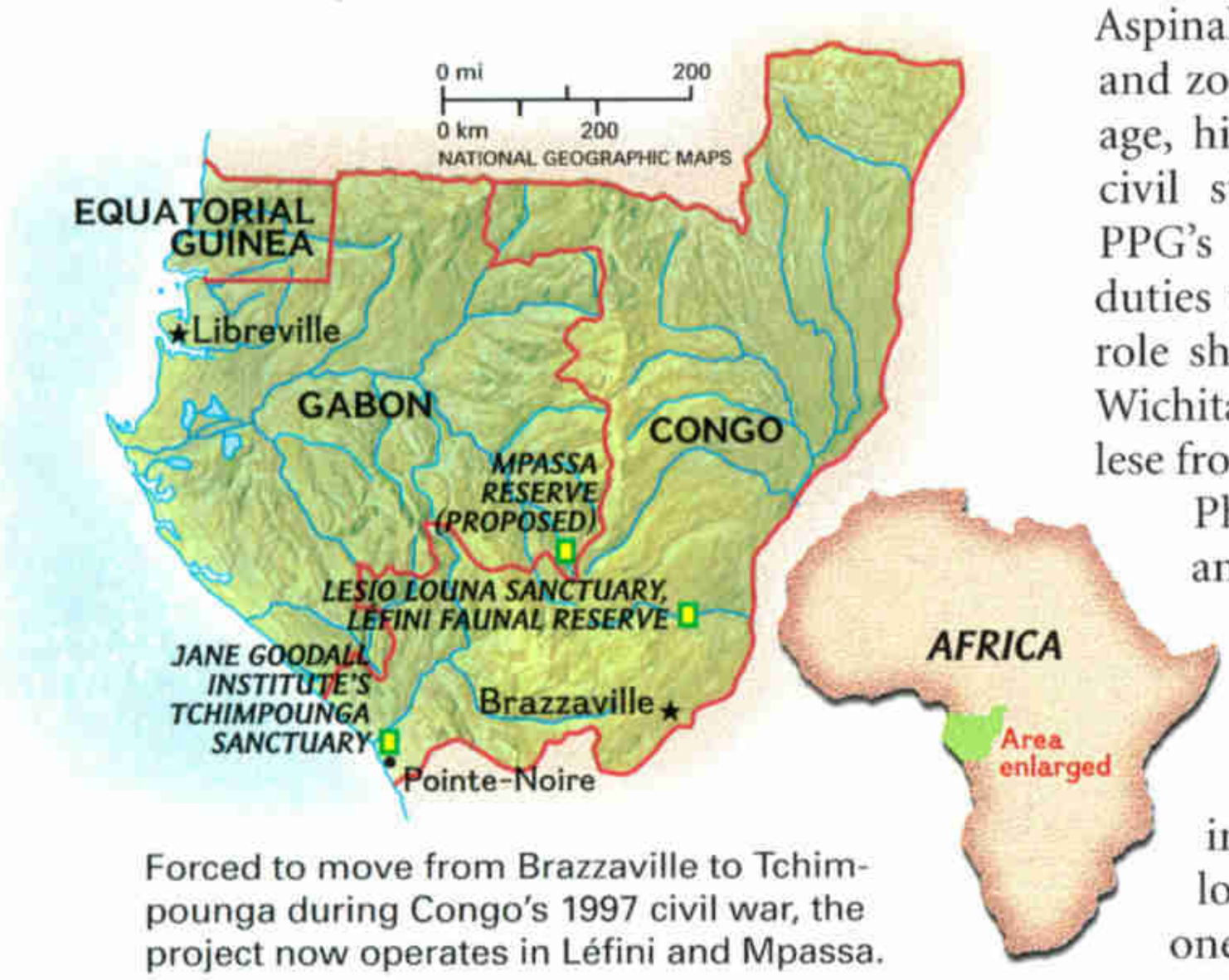
It was 7 a.m. in the Republic of the Congo, and the morning routine at the gorilla orphan camp was under way. Situated on Congo's Atlantic coast, the camp, located within the Jane Goodall Institute's Tchimpounga Sanctuary, was serving as a temporary home to 11 western lowland gorillas. Although their exact origins were uncertain, most were "bush-meat orphans": Their mothers had been slain by hunters, who butchered the animals and smoked the meat in jungle camps and shipped it to cities and villages across the country, often as illicit cargo on logging trucks.

The orphan babies had been kept captive—later to be sold as pets. If they had not been rescued from that fate, they would likely have perished of disease, malnutrition, or depression, for gorilla babies are as vulnerable and needy as human ones, relying on the care and emotional support of a mother for as long as eight years. As McConnery has seen many times in her work with traumatized gorilla orphans, "The light in their eyes simply goes out, and they die."

Most of Tchimpounga's orphans had been living in an orphanage on the grounds of the zoo in Congo's capital city of Brazzaville until civil war erupted there in June 1997. At the height of the conflict McConnery and her colleagues gathered up the young gorillas and, under the protection of French legionnaires, made a dash for the airport amid fusillades of mortar and assault-weapons fire. They boarded a French cargo plane that had been sent to evacuate expatriates and fled to the relative peace of the Congo's second largest city, Pointe-Noire, about an hour's drive from Tchimpounga.

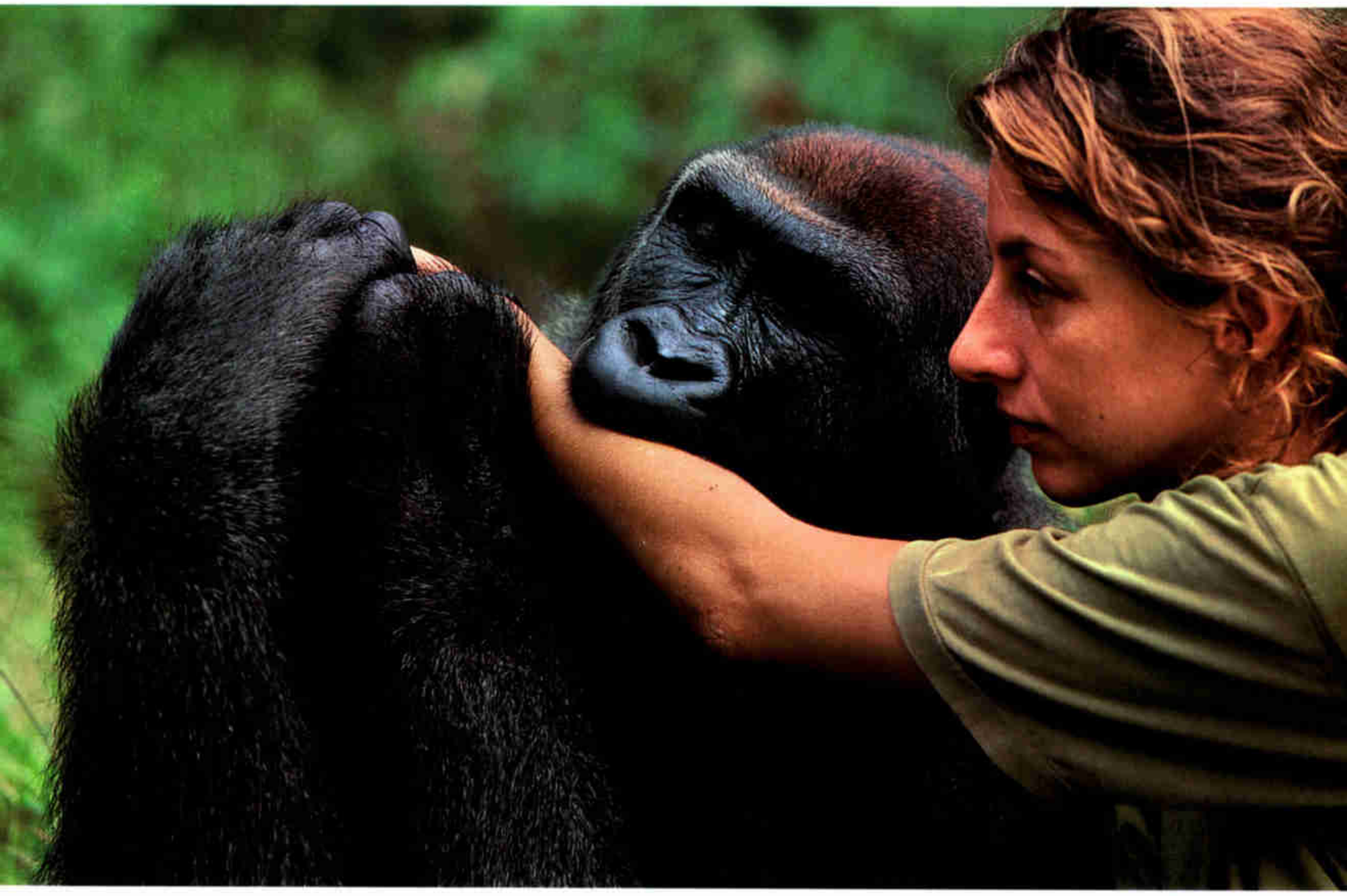
The orphans were wards of the Projet Protection des Gorilles (PPG), which seeks to rescue orphaned gorillas, raise them in a healthy group environment, and release them in one of two sanctuaries in Congo and Gabon. The 12-year-old program is underwritten by John Aspinall, an eccentric British gambling tycoon and zoo owner, and overseen by Amos Courage, his 31-year-old stepson. Because of the civil strife in 1997, McConnery, normally PPG's accountant, had put aside her office duties to fill in as a nanny for the gorillas, a role shared by Liz Pearson, a biologist from Wichita, Kansas, and several dedicated Congolese from Brazzaville.

Photographer Michael "Nick" Nichols and I would spend nearly a month living with the Tchimpounga orphans and a second group of six that PPG keeps in the Léfini Faunal Reserve. Walking with the youngsters by day, and sleeping above them at night in a dormitory loft, we would gain an intimate view of one of the most inscrutable large mammals



Forced to move from Brazzaville to Tchimpounga during Congo's 1997 civil war, the project now operates in Léfini and Mpassa.

Photographs by MICHAEL NICHOLS
NATIONAL GEOGRAPHIC PHOTOGRAPHER



A gentle bite by Kola, leader of a group reintroduced to the wild at Léfini, is a message that rehabilitator Despina Chronopoulos understands to mean: Leave us alone now. Chronopoulos sees her role as "something between a mother and a boss, but I wouldn't interfere in their affairs if I wasn't invited."

known to science, the western lowland gorilla *(Gorilla gorilla gorilla).* Although well represented in zoos and more numerous in the wild than the other two gorilla subspecies—the eastern lowland gorilla and the mountain gorilla of Dian Fossey fame—the western subspecies has been the most frustratingly cryptic of the three, largely because of the tangled, swampy jungle terrain the animals inhabit.

PPG weans the orphans from human dependence gradually, allowing them to form into social groups under the leadership of dominant males and return to their natural habitat. In the process the staff logs hundreds of hours of direct observation of a wide range of behaviors. They are able to watch the animals' personalities develop and can attempt to decipher the subtle, intricate rules of gorilla social conduct. Their data contribute to greater understanding of the subspecies, whose numbers, believed to be close to 100,000, are declining.

Each morning the African staff arrived at the Tchimpounga camp at 7:30 sharp to begin preparing food and boiling water for the infants' formula. At 8 a.m. the gorillas were released from their cages and immediately scampered in all directions.

After the momentary commotion, McConnery rounded up the infants to spend the day with her in a shady spot close to the dormitory. The juveniles ventured farther into the forest under the supervision of Albertine Ndokila and Anne Yala-Epongo.

One bright morning we set out with the two women across the golden savanna leading to the forest. The gorillas followed agreeably, with two males, Kabo and Makoua, leading the way. Neither was mature or experienced enough to

MICHAEL MCRAE wrote about Vietnam's Tam Dao National Park for the June 1999 issue.



Raining down laughter, orphans take a ride on a vine at Tchimpounga, reassured by nearby humans. Though the gorillas gather most of their own food, Chronopoulos says leaving them by themselves in the forest "would be like turning a seven-year-old loose in New York City."

Their mothers had been slain by hunters, who

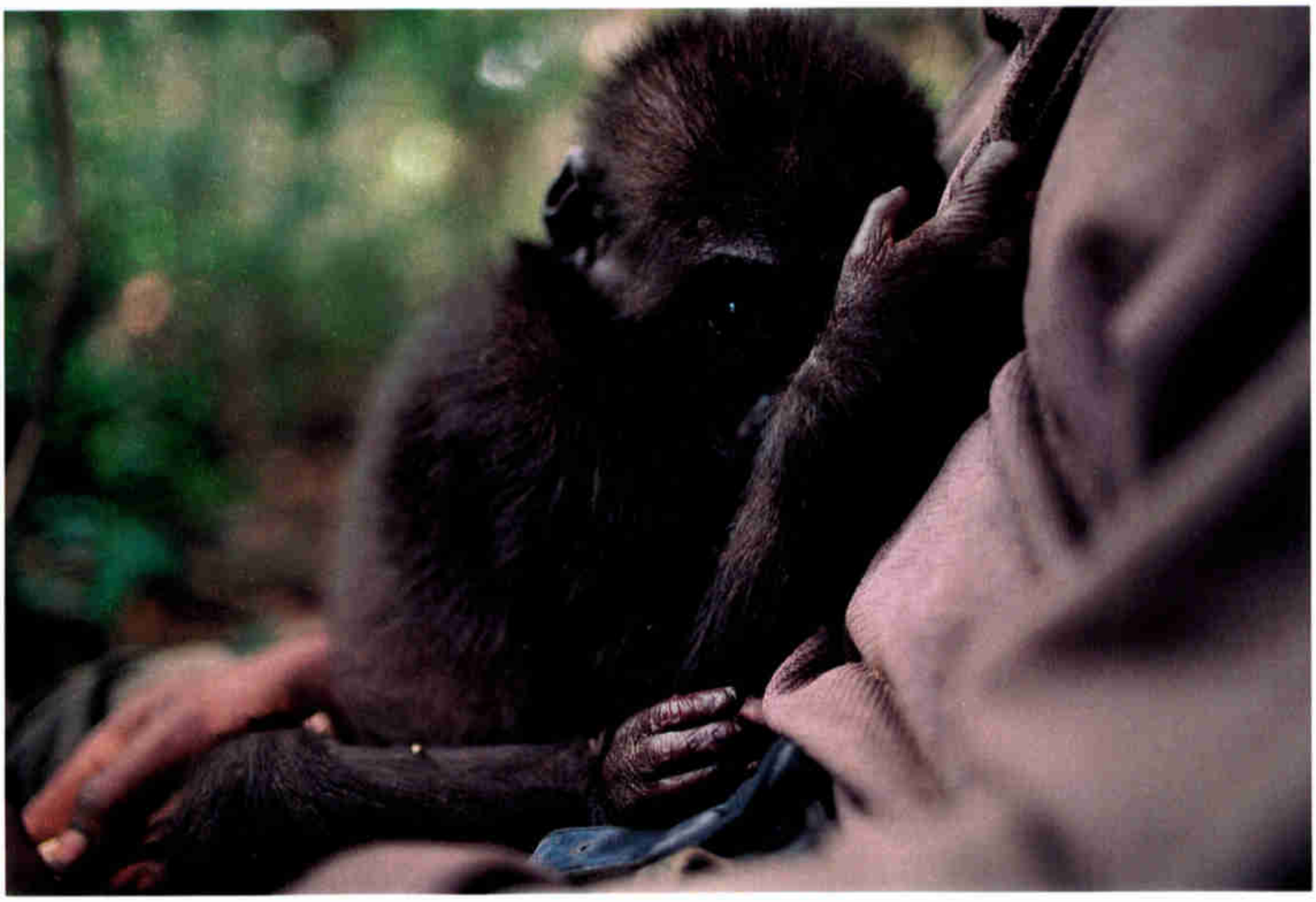
lead a group, but circumstances had thrust that role upon them. Makoua watched over three females, Bougou, Lengui, and Loubomo. Kabo oversaw Bangha, a young male, and Mayoko, a pregnant subadult female. Her pregnancy was PPG's first—and a sign that the orphans were adapting to their social environment, artificial though it was.

The forest floor we trod was more swamp than terra firma. Downed trees and branches lay scattered like pickup sticks across our path. The gorillas scuttled over these obstacles on all fours, but we humans had to pick our way gingerly through boot-sucking mud and the jumble of slick, wet deadfall. At one point I paused to retie my boots, and when I rejoined the procession, Bangha charged from behind and slapped me hard on the back. Pearson told me that he might have been trying to determine whether I was a threat, or maybe he was just acting up for a new audience.

Whatever the case, Yala-Epongo and Ndokila had little patience for his behavior. Later, as we watched the youngest apes swinging from stout vines over a pond, Bangha sneaked around behind us for another attack. Yala-Epongo caught him in the act and glared at him. He flinched and retreated, but only momentarily, so she escalated her threat. She raised her walking stick above her head, and her eyes, wide with disapproval, said, Watch your step, buster! After that Bangha backed off.

By midafternoon Bangha appeared to have accepted me. While the others reclined on the massive trunk of a fallen tree, he came over to lie at my feet and nibble some greenery. So did Bougou, a female of about five. The edge of uncertainty I'd been feeling dissipated.

One morning McConnery and I set out for a walk with the babies toddling ahead of us, spinning pirouettes and beating their chests in mock display. We paused from time to time as



Clinging to a surrogate parent, six-month-old Kongo arrived at Mpassa scarred by machete wounds and infested with mites. He bit caretakers and shied from other gorillas. But, like most of the orphans since the project left Brazzaville—where two-thirds succumbed to diseases and parasites

butchered and smoked the meat in jungle camps.

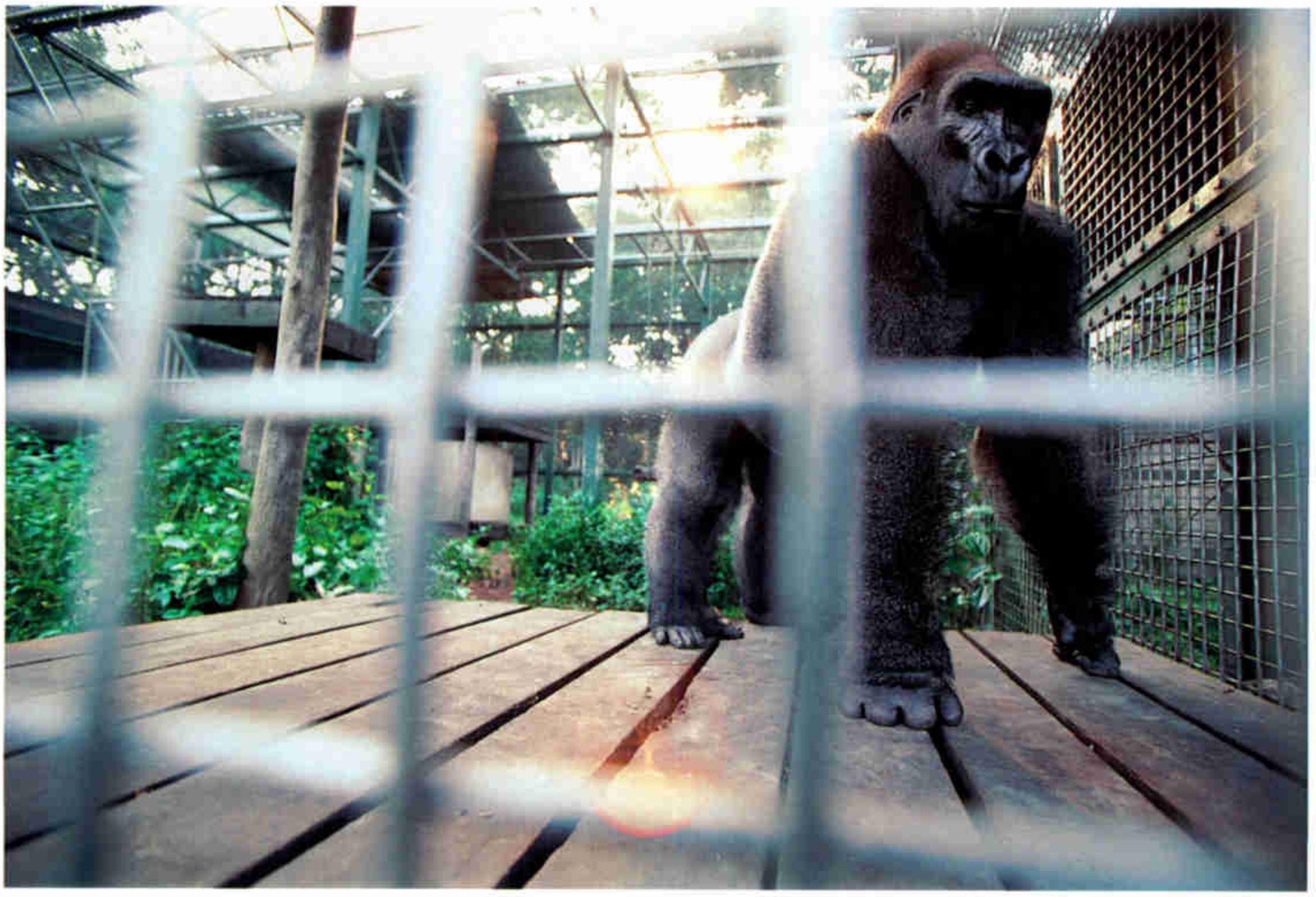
the gorillas investigated their surroundings. The younger gorillas learned which plants were edible by watching the older infants, who retained some knowledge from their parents. We watched a wrestling match, and then the gorillas scooted up into the trees to dangle from vines, twirling and swatting at one another.

The peaceful roar of surf mingled with the buzz of insects, and a soft, salt-tinged breeze stirred the trees. The infants began to tire out and descend for their naps. I, too, felt my eyes grow heavy. Just as I began to doze, Koto crawled into my lap, lay back on my upraised knees, and gazed into the treetops until she fell asleep snoring. The life she might have known with her mother was gone. Still, the staff hoped that living in a natural setting as part of a group would start her on the long road to becoming a full-fledged gorilla again, with no need to snuggle in the lap of a human for comfort or reassurance.

SIX MONTHS after our visit the Tchimpounga orphans would be transferred to Lesio Louna Sanctuary in the Léfini Reserve. There a 37-year-old Greek woman named Despina Chronopoulos took charge of them.

The flamboyant Chronopoulos, then one of PPG's reintroduction supervisors, came to Africa as a journalist in 1992 to write about the project but stayed on to work with the gorillas. Her role in the sanctuary grew to include surrogate mother, mentor, and social engineer.

Chronopoulos was not schooled as a field biologist, and her work does not follow the strict protocols that govern scientific research. She freely interprets the behaviors she observes and describes gorilla social hierarchy in anthropomorphic terms. For example, when she described Kola, Léfini's dominant male, she explained that although he was eight months younger and considerably smaller than



common in the capital—Kongo has regained his health and discovered his position in the gorilla social order. Not so Yambo (above). Released into the forest at age 10, Yambo twice approached a village and attacked people. Now he remains in a cage at Léfini, locked away from the wild.



Careful to stay on the sidelines, guardian Albertine Ndokila lets two subadults engage in a friendly tussle at Tchimpounga. Ndokila could stop them with a cough or a disapproving look, but, like a gorilla mother, she allows them to work out their own relationships.

Critics argue that long-term care for orphan





"With love and attention you will save them; they will decide to live," says project staff member Isabelle Jourdan, who clasps the hand of a baby she mothered (above). At Mpassa, project director Liz Pearson (top) weans infants until they approach bottles only out of curiosity. Shepherding orphans at Tchimpounga (opposite), Amos Courage, coordinator in Congo, walks them to the building where they sleep. Such care is costly but fosters human-gorilla understanding and helps win crucial support from local villagers.

10-year-old Masissa, he was able to maintain his authority with "charm, charisma, and the ability to form alliances and resolve conflicts."

Chronopoulos's interpretations are viewed with skepticism by researchers like Caroline Tutin. Tutin, known for her work since the 1980s with gorillas in Gabon's Lopé Reserve, describes Chronopoulos's studies as "fundamentally emotional," although she does not discount entirely the value of Chronopoulos's observations and intuition. "I have enormous respect for Despina's commitment," says Tutin. "She is inside the heads of those gorillas."

Richard Parnell, who oversees a study of wild gorillas in Nouabalé-Ndoki National Park in northern Congo, notes: "There are pitfalls in judging what behavior means, but you can also be too clinical. With an animal as socially complex as the gorilla, you need to collect both objective data and subjective impressions."

Subjective or not, Chronopoulos's explanations seemed uncannily apt to Nick and me. The day we were to meet the Léfini gorillas, she left camp with two trackers an hour before us, to locate the gorillas and settle them down.

gorillas is expensive, impractical, and misguided.

When we approached, Kola was sprawled in Chronopoulos's lap playing with her long, curly hair, but he immediately came over to inspect me. I bowed submissively as the 275-pound gorilla probed my scalp for nits and slurped sweat from my brow. Meanwhile, Masissa hurtled back and forth at the periphery of the group, ripping up shrubs and brandishing them to show his frustration at not being allowed to approach until Kola finished with me.

Chronopoulos explained that Masissa was odd man out. He couldn't approach her because that prerogative fell to Titi, the group's second in command, who went to play with her as soon as Kola had moved to me. Masissa's fit lasted until Mbinda, the third member of the ruling triumvirate, started play-wrestling with him. At age eight, Mbinda was what Chronopoulos characterized as "the diplomat of the group": He didn't let conflict arise if he could help it, and when it did, he was usually the one to reconcile the aggrieved parties.

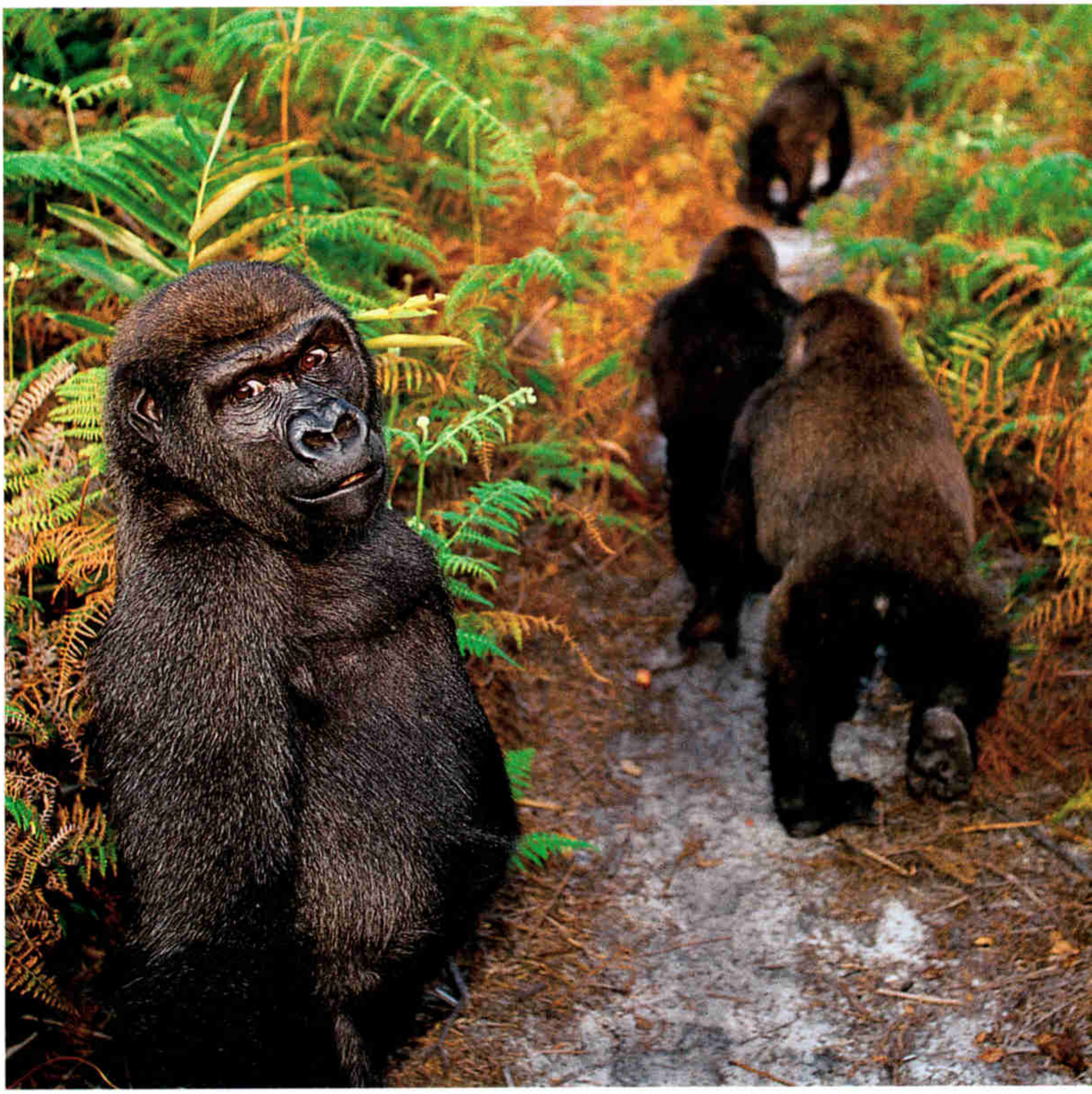
As the days passed, we saw Chronopoulos act as both a mother and a status symbol in Léfini's social order, and we saw the gorillas turn to her for consolation when they fought. But we also saw her limit her intervention to times when she believed it was truly necessary.

During a prolonged dustup that we watched play out among Kola, Titi, and Mbinda, Chronopoulos stood back—and Kola, the one that had been attacked, apparently didn't want her help. After rejecting a peace overture from one of the other two, he walked over to Chronopoulos, grabbed her forearm, and gently bit it.

"It's time for us to go," Chronopoulos said abruptly. "It's his way of saying to me, OK, we have some matters to settle here. You leave."

When we met the group the next morning by the cage, Kola had a gash on his head. Chronopoulos thought it was a bite wound related to the previous day's altercation. "Kola is not





part of the group today," she said, looking perturbed. "Something is happening."

By the next morning Kola was nowhere to be found. Chronopoulos thought she knew why: The group's lone female, Djembo, was coming into estrus, and Titi appeared to be courting her. That would represent a serious challenge to Kola's authority. An hour later we located Kola. He was by himself and had another bite, on his wrist. He was whimpering plaintively for the others and calling to them with chest beats. "This is ridiculous," snapped Chronopoulos. "We need more females here."

When the other gorillas appeared, Titi was in an aggressive posture—back rigid, arms straightened, knuckles on the ground. The air was filled with tension. Djembo scampered off, leaving the males to work out their differences.

"Don't move," Chronopoulos cautioned us. Kola, Titi, and Mbinda clustered around her, holding her arms and taking turns lying in her lap until they could at last face each other. Then, with the tension dissipated, they launched into a rowdy game of wrestling, full of mock biting, grunting, and laughter.

Chronopoulos ended up as the peacemaker this time, not Mbinda. "It would have been a violation of trust if I had refused to participate," she explained. "Kola needed me, just as I have needed him. It's a bond of loyalty that



goes both ways. We're friends, and I hope that even after the gorillas no longer need us, we can return, and the friendship will remain."

PROJET PROTECTION DES GORILLES has been criticized by some for being too touchy-feely, little more than the self-indulgence of an affluent old man. Critics argue that providing long-term care for orphan gorillas is expensive, impractical, and misguided. From a conservation standpoint, they say, projects such as Aspinall's do little to safeguard a species' future. Better to let the orphans die—or dispose of them—and spend the money on habitat protection.

Turning to confront a human presence, Bangha pauses along a trail at Tchimpounga. He was later released at Léfini. Such sanctuaries make a life-and-death difference for orphans, providing abundant space, protection from poachers, and a thing nature seldom grants—a second chance.

Aspinall remains committed. Despite the cost of maintaining sanctuaries, he decided to finance another in Gabon. Late in 1998 the first Gabonese gorilla orphans were moved from Libreville, the capital, to the proposed Mpassa Reserve, where they are doing well. With its own staff of rehabilitators, the new 425,000-acre park will answer some of the arguments of PPG's critics by providing habitat protection—not just for gorillas but for all the park's animals.

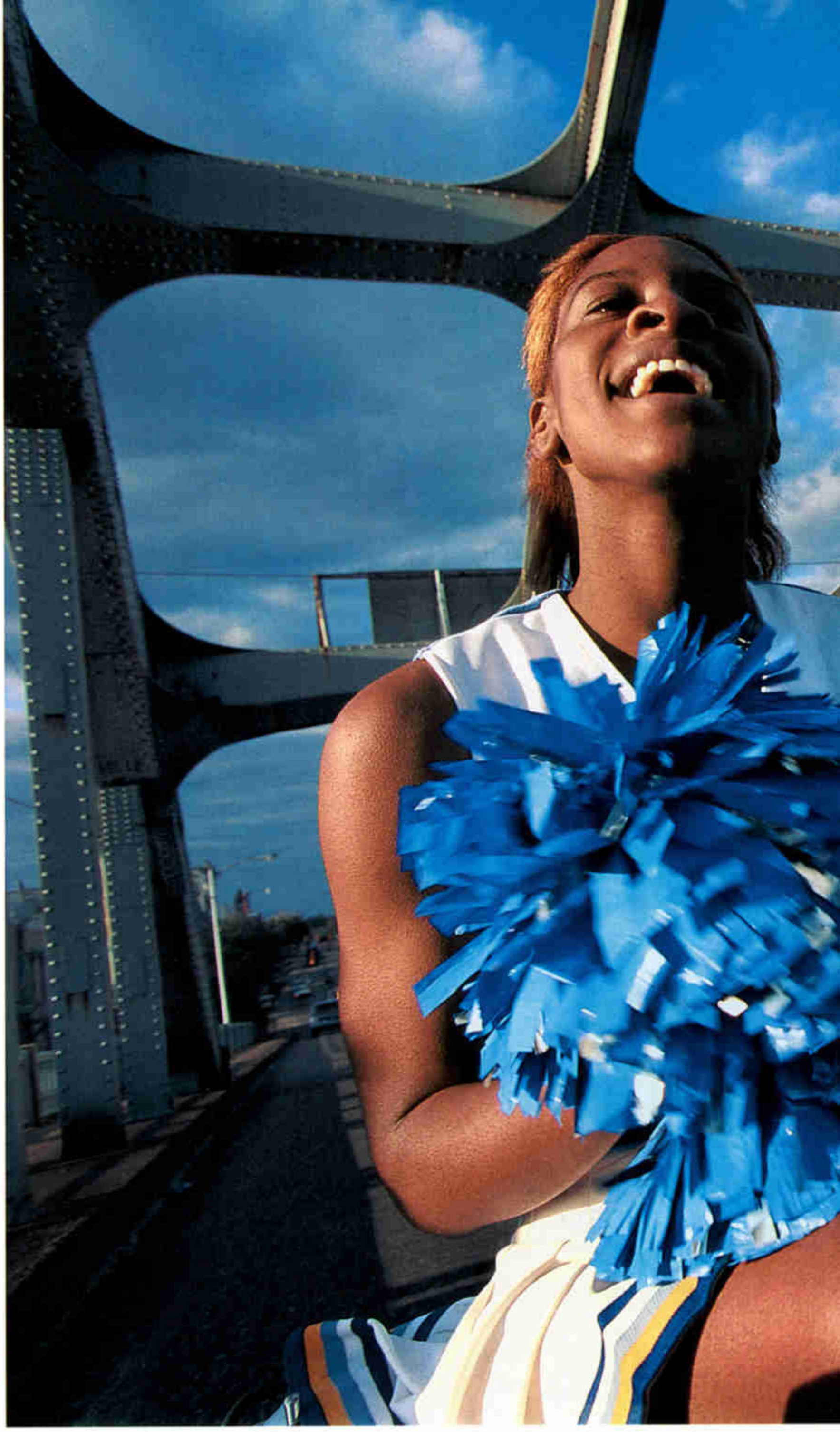
Meanwhile, the Léfini gorillas remaining in the Congo "have become a cause célèbre," Courage says. "The fact that everyone in Congo knows about them makes them ambassadors for the species. And the cornerstone of any conservation project is community involvement. I'll battle anyone who says that our money is better spent on habitat protection."

Indeed the orphans' celebrity has helped dry up the trade in bush-meat babies coming into Brazzaville, Courage says, although he doubts that the underlying problem—commerce in gorilla meat itself—will be similarly affected. Eating bush meat is a tradition in central Africa, and a public stand against consuming imperiled species will take effort and resolve by governments that so far have shown little initiative to enforce antipoaching laws.

Before he struck it rich on horses and cards, Aspinall used to visit an old gorilla named Guy at the London Zoo every day. Afterward, he acquired gorillas for his two private animal parks in England. From the start one of his goals has been to return captive-bred animals to their native lands, and he has done so with a black rhino sent to South Africa, Przewalski's horses to Mongolia, and pythons to Indonesia. Late last year he finalized plans to translocate two gorillas to Mpassa, fulfilling a longtime dream.

"The fact that the project is an indulgence is a perfectly correct analysis," says Aspinall. "But you might say the same thing about people who buy Impressionist paintings. I do this to indulge my soul. Thank God I can afford to do what I do." □

On March 21, 1965, more than 3,000 civil rights advocates set out on a 54-mile march from Selma, Alabama, to Montgomery, the state capital, to demand voting rights for black citizens. Today that long walk toward equality is commemorated as the United States' newest national historic trail.



SELMA to MON

Freedom rings like a cheer for Shameecka Perkins, far right, as she and friends cross Selma's Edmund Pettus Bridge, where voting rights marchers met with violence 35 years ago. "We can vote. We can go where we want to go and attend any school we want," she says. "The people who made that possible are my heroes."



TGOMERY

The Road to Equality

BY CHUCK STONE PHOTOGRAPHS BY MERIA JOEL CARSTARPHEN

"We chanted as we marched: 'Pick 'em up and lay 'em

DRIVING ON an Alabama four-lane highway through an idyllic countryside on a sun-blistered July day with the convertible top down is not a setting for serious reflection. But I could not stop thinking about this famous highway, paved with the memories and the blood of freedom marchers.

Thirty-five years ago civil rights activists followed this route, Highway 80, much of it then two lanes lined by cotton fields, from Selma to Montgomery in a protest that led to passage of the Voting Rights Act in 1965.

Back then Selma was a small southern town of 28,000 people with segregated schools, housing, jobs, theaters, swimming pools. Like millions of African Americans across the South, those in Selma were denied the right to vote by poll taxes, literacy tests, and other intimidation tactics. In Selma's county, Dallas, more than half the voting-age population was black, but only 2 percent was registered to vote.

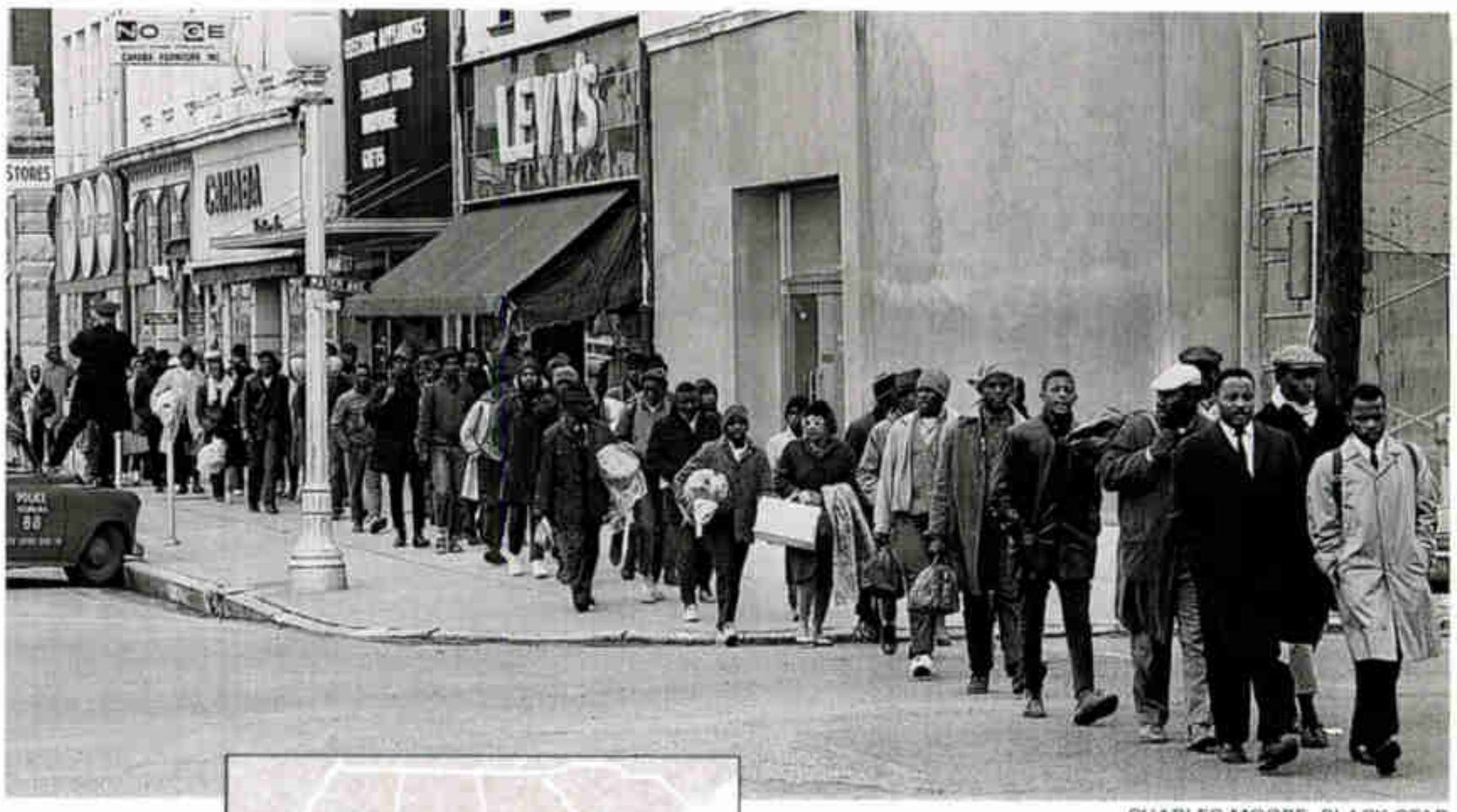
Today only the state and U.S. flags fly atop the Capitol, where upwards of 25,000 protesters—black and white—rallied at the march's end. The Confederate flag, a bitter reminder of slavery for many, was finally removed in 1993. "Times are different," says Selma student Amanda Pettaway. "What was done in the past should stay in the past."

"We were nonviolent soldiers in the army of freedom," says John Lewis (opposite,

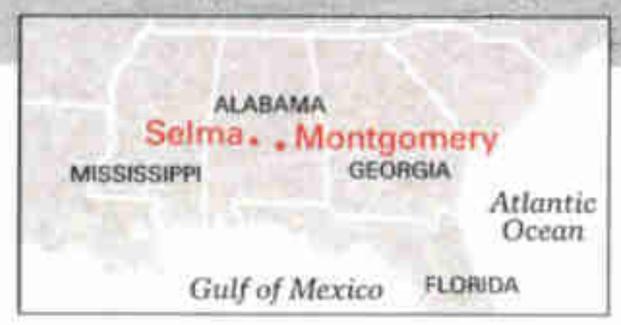


down, all the way from Selma town.'"—Congressman John Lewis

at far right), who with Hosea Williams of the Southern Christian Leadership Conference led 600 people on March 7, 1965, in a first—and failed—attempt to march to Montgomery. On that Bloody Sunday state troopers and sheriff's deputies wielded clubs and tear gas.



CHARLES MOORE, BLACK STAR





During Freedom Summer of 1964, blacks as well as whites staged an intensive effort across the South to end segregation and secure voting rights. They met massive resistance from white segregationists. Volunteers were killed; black churches burned. In Selma, as in most places, voter registration was a grassroots effort, led by the Dallas County Voters League with the help of the Student Nonviolent Coordinating Committee (SNCC, pronounced "snick"), an organization born in 1960 out of the South's lunch-counter sit-ins.

But at the Dallas County Courthouse, where registration was open only two days a month, black citizens were still being turned back by Sheriff Jim Clark and his deputies. The voters league appealed to Martin Luther King, Jr., president of the Southern Christian Leadership Conference (SCLC), to add his charismatic clout.

In January 1965 King launched "a determined, organized, mobilized" series of demonstrations in Alabama. "We must be willing to go to jail by the thousands," he thundered from the pulpit of Selma's Brown Chapel African Methodist Episcopal Church. "We are not on our knees begging for the ballot, we are demanding the ballot."

By early February more than 3,000 black protesters in the Selma area had spent time in jail, including hundreds of schoolchildren.

Annie Lee Cooper, a 53-year-old Selman who helped manage a motel, defiantly stood up to Sheriff Clark on the steps of the Dallas County Courthouse. "Ain't nobody scared around here," she told Clark, who

then pushed her hard enough to make her stagger. Cooper retaliated with a knockdown punch to Clark's head. Deputies pinned her to the ground, and Clark hit her repeatedly with his billy club. "Clark whacked her so hard," said SNCC leader John Lewis, now a U.S. congressman from Georgia, "we could hear the sound several rows back."

Bloodied and bruised, she was taken to jail.

"We avoided holding demonstrations at night," Lewis told me. "It was too dangerous." Those fears were realized in the nearby town of Marion on the evening of February 18, when an orgy of beatings hospitalized several marchers and fatally wounded a 26-year-old man named Jimmie Lee Jackson, who was trying to protect his mother.





"I really tested my courage on Bloody Sunday.

Jackson's death galvanized Selma's voting rights movement. Though not initially a part of SCLC's campaign strategy, a massive march from Selma to Montgomery was planned. At the time, no one anticipated the inspirational place it would take in U.S. history.

On Sunday, March 7, hundreds of demonstrators, led by John Lewis and Hosea Williams of SCLC, set out on the 54-mile trek. At the Edmund Pettus Bridge they confronted Alabama state troopers sent by Governor George Wallace, along with Jim Clark and his "posse."

Mementos of trouble and triumph adorn Marie Foster, who walked the full five-day march. Over the years fellow marchers and supporters have signed the safety vest she wore. Marking the 30th anniversary of the assassination of Martin Luther King, Jr., marchers in 1998 (above) reversed the route, walking from Montgomery to Selma.

The former editor of three African-American newspapers, CHUCK STONE is now the Walter Spearman Professor of Journalism at the University of North Carolina at Chapel Hill. Freelance photographer MERIA JOEL CARSTARPHEN was born in Selma, Alabama, five years after Martin Luther King, Jr., led the voting rights march to Montgomery. For her work in teaching photography to schoolchildren, she was selected by our Photographic Division for its annual faculty fellowship in 1997.

Have you ever had to find the courage to stand up for your rights? Tell your story online at *www.nationalgeographic.com/ngm/0002.*



Ordered to disperse, the marchers stood fast. Troopers began to push them back; marchers began to fall. Clark's men, some on horseback, charged in. A chaos of teargassing, whipping, and clubbing left several demonstrators unconscious and the rest running for their lives. Ironically, a nonviolent march violently ended in Bloody Sunday.

Televised images of flailing billy clubs spilled into living rooms across the country. Americans were horrified. Even George Wallace reprimanded the state troopers for their actions. Hundreds of people from other states, including 450 white clergymen, nuns, and rabbis, headed toward Selma to support the voting rights campaign.

Momentum began building for another march. A federal judge issued an injunction prohibiting it until the demonstrators' safety could be ensured. Still, on Tuesday, March 9, Martin Luther King, Jr., led 2,000 people across Pettus Bridge. Once again state troopers blocked the way. King turned the marchers around, and no one was injured.

The following week President Lyndon Johnson went on television to call for legislation banning restrictions that denied blacks the right to vote. "Their cause must be our cause too. Because it's not just Negroes, but really it's all of us who must overcome the crippling legacy of bigotry and injustice," he said, dramatically concluding with the civil rights refrain: "And we *shall* overcome."

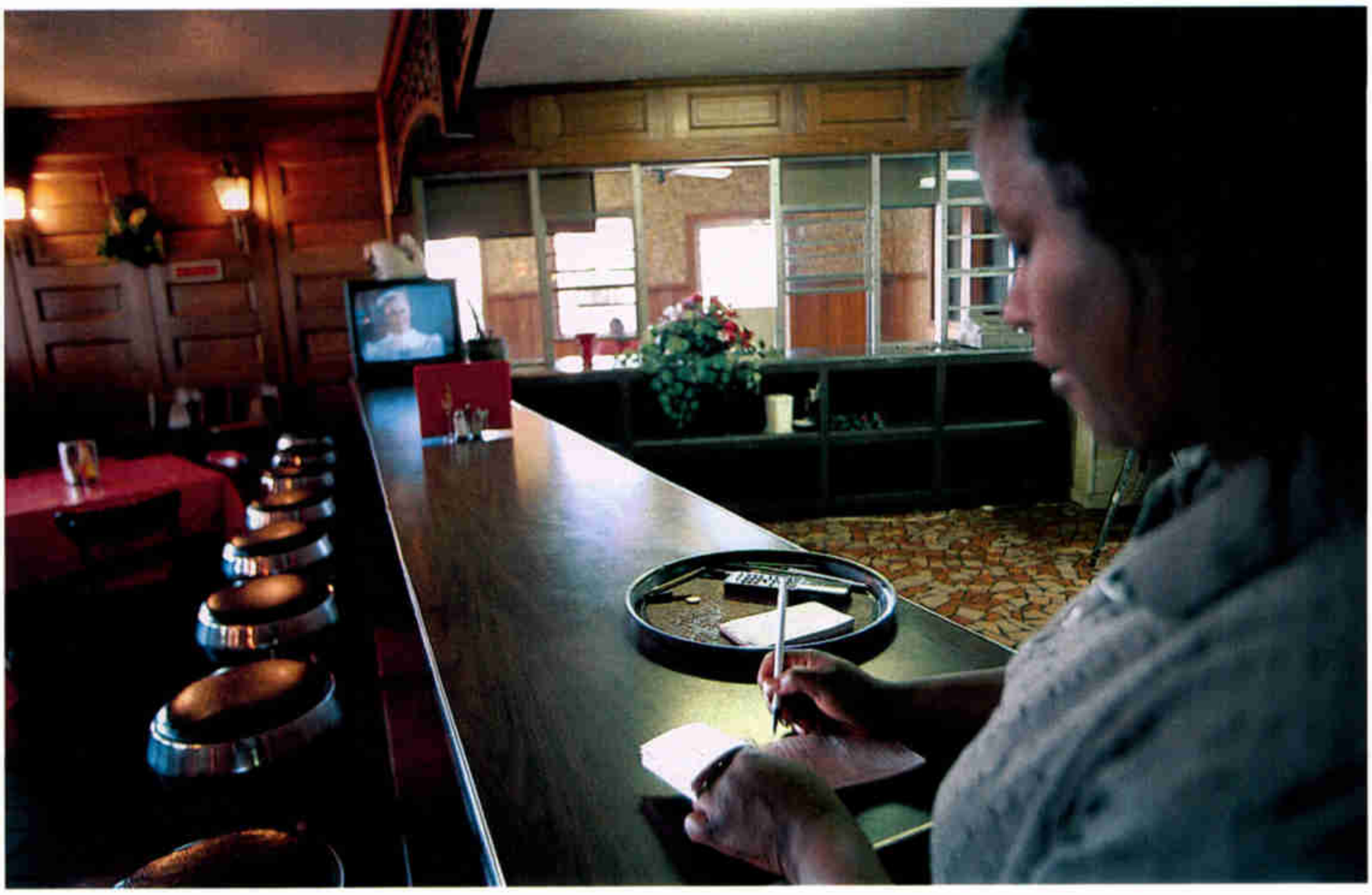
The stage was set for the third and final push. For five days, from March 21 to 25, the road between Selma and Montgomery was lined with marchers, their numbers ebbing and flowing. Led by King, more than 3,000 people set out from Brown Chapel A.M.E. Church. Among those at the head with King were fellow Nobel Peace Prize winner Ralph Bunche and theologian Rabbi Abraham Heschel. At the march's end the crowd that King addressed live on national television from the foot of the State Capitol steps had swelled beyond 25,000. Another speaker was Rosa Parks, whose refusal to give up her seat on a Montgomery bus had helped set off the modern civil rights movement in 1955.

"The march was a turning point in the movement," said John Lewis. That August, Congress passed the Voting Rights Act, which guaranteed that every American 21 or older could exercise the right to register and vote. In Alabama alone the number of registered black voters jumped from 92,700 in 1965 to 250,000 in 1967.

> It seemed like God was trying our souls." —Marie Foster, marcher

Sheyann Webb Christburg, who at age seven made all three marches from Selma, without her parents, remembers the emotion. "I asked my parents to become registered voters for my birthday present. I thought that my parents could be free citizens if they voted—that's what I wanted for them." The first time they voted, they took Sheyann along to the polls. Today an administrator at Alabama State University in Montgomery, she said, "I've never forgotten it."

This turning point in history eventually won federal recognition. In 1996 the National Park Service commemorated the march by designating the 54 miles between Selma and Montgomery the 12th national historic trail, the first to honor African Americans. The women of SCLC had earlier erected their own monument, midway on the trail, for a white woman from Detroit, Viola Liuzzo, whom Ku Klux Klansmen murdered while she chauffeured marchers back to their homes.



"This is the first national historic trail where many

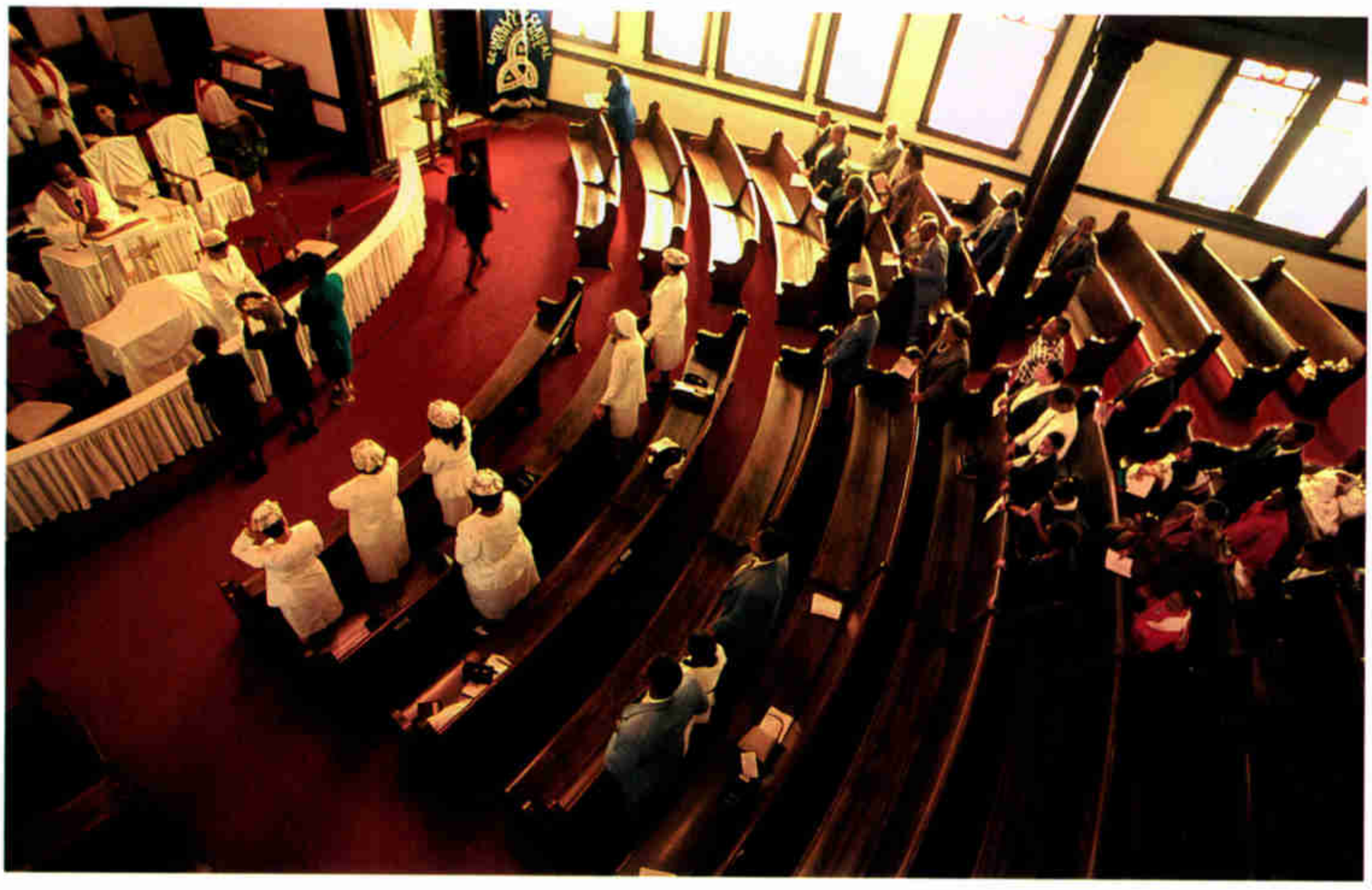
"My people could only use the take-out window and outdoor rest rooms," says James Smith, who owns a former whites-only restaurant (above). In the early 1960s the South was known for its cotton (below) and for barring—by discriminatory laws and violence—its large black population from registering, much less voting. Organizers chose Alabama for what would be the final push for voting rights.





of the marchers are still alive." —Joanne Bland, who marched at age 11

Storm clouds gather as visitors pay respects at the site where Viola Liuzzo, a white housewife from Michigan, was murdered by members of the Ku Klux Klan as she drove black protesters back to Selma after the march. "She saw a wrong and tried to make it right," says her son Tony. Peaceful communion now pervades Brown Chapel A.M.E. Church, march headquarters and haven for Bloody Sunday's weary and wounded.



THIRTY-FIVE YEARS after the march Selma is still working hard to abandon its segregated past. Set on a hill overlooking the Alabama River, the city has discarded the Confederate flag from its city council seal and added the Edmund Pettus Bridge and an ascending butterfly, to symbolize rebirth. Its motto: "Civil War to Civil Rights and Beyond."

"The people of Selma are very sensitive to what happened and are trying to put the strife behind them," said Kathleen Ann Cordes, author of *America's National Historic Trails.*

While in Selma I asked everybody I met the same question: Has there been much progress since 1965? Blacks were slightly more pessimistic than whites.

One prominent African-American woman worried that though the city's race relations have improved, Selma's economy has shown very little progress. How much? She held her thumb and forefinger a half inch apart. "It's a city of no hope."

At a meeting organized by two city councilwomen—one black, one white—a racially integrated group of teenagers echoed those feelings. When asked how many intended to return to Selma after graduating from college, nobody raised a hand.

A better world whizzes by for a toddler on a bus trip along Highway 80, where protesters endured jeers by day and cold, muddy campsites by night. Less than five months after the march the U.S. Voting Rights Act became law. As civil rights struggles continue, Martin Luther King, Jr.'s words still resonate: "We are on the move and no wave of racism can stop us."

"We've come a long way, but we've still got



Woodrow Fletcher is a Selma booster. The retired black salesman, Sunday school teacher, and church deacon hailed Selma as "the best place in the world. It's not exactly where we want to be, but look where we came from."

Kathryn Tucker Windham, a white storyteller who travels internationally to spin her famous stories of Alabama, enthused, "I could live anywhere in the country, but I love Selma."

Even though many Selmans have come together to forge a unified community, it is still a city of three distinct groups that occasionally overlap—a black Selma, a white Selma, and an interracial Selma. At a Little League game I attended, white parents sat near third base, black parents behind the catcher.

Nonetheless, an optimism prevails. Black and white business leaders meet at a weekly prayer luncheon. Selma's Habitat for Humanity has harnessed the city's interracial goodwill to build houses sponsored by local churches and community groups. And the walls of the public library are decorated with posters of interracial groups extolling pride in Selma, one bearing the slogan, "We're coming together now to write the history of Selma's future."

The most powerful writer of Selma's future resides in City Hall: Joe T. Smitherman, who has been mayor since 1964. First elected as a moderate, he switched support to segregationist governor George Wallace. Five years ago on a national TV show with Representative John Lewis, whom he now admires, Smitherman confessed he had been wrong.

"I'm a populist," he explained to me in a baritone deepened by uninterrupted cigarette smoking. "I came from a poor white family. I understand how blacks feel. If I couldn't have voted, I would have been out there with them. Selma is now 58 percent black and 42 percent white. Not one unpaved street. All the neighborhoods have sidewalks. I use the name Selma to get federal funds."

Though some Selmans grumble about slow progress, blacks have been elected to represent the city in offices they did not hold in 1965: a U.S. congressman, a state senator, two state representatives, and a majority on the city council. They also hold most of Selma's top administrative posts, including fire chief, police chief, municipal judge, postmaster—and president of Wallace Community College Selma.

Every March Selmans commemorate Bloody Sunday with the Bridge Crossing Jubilee, a street festival and a reenactment of the march to Pettus Bridge. This year, on the 35th anniversary of the completed march, hundreds of people are expected to walk again from Selma to Montgomery—a journey that Sheyann Webb Christburg says "drove me to be the person I am today."

"The spirit of the times is what I remember most," says Joanne Bland, who marched at age 11. Now the acting director of Selma's National Voting Rights Museum, she tells her story to visiting schoolchildren, born into a different world. "It can be hard to explain to them that this battle had to be fought in the 1960s to gain the right to vote." □

a ways to go." —Jamie Wallace, former Selma reporter, who covered Bloody Sunday



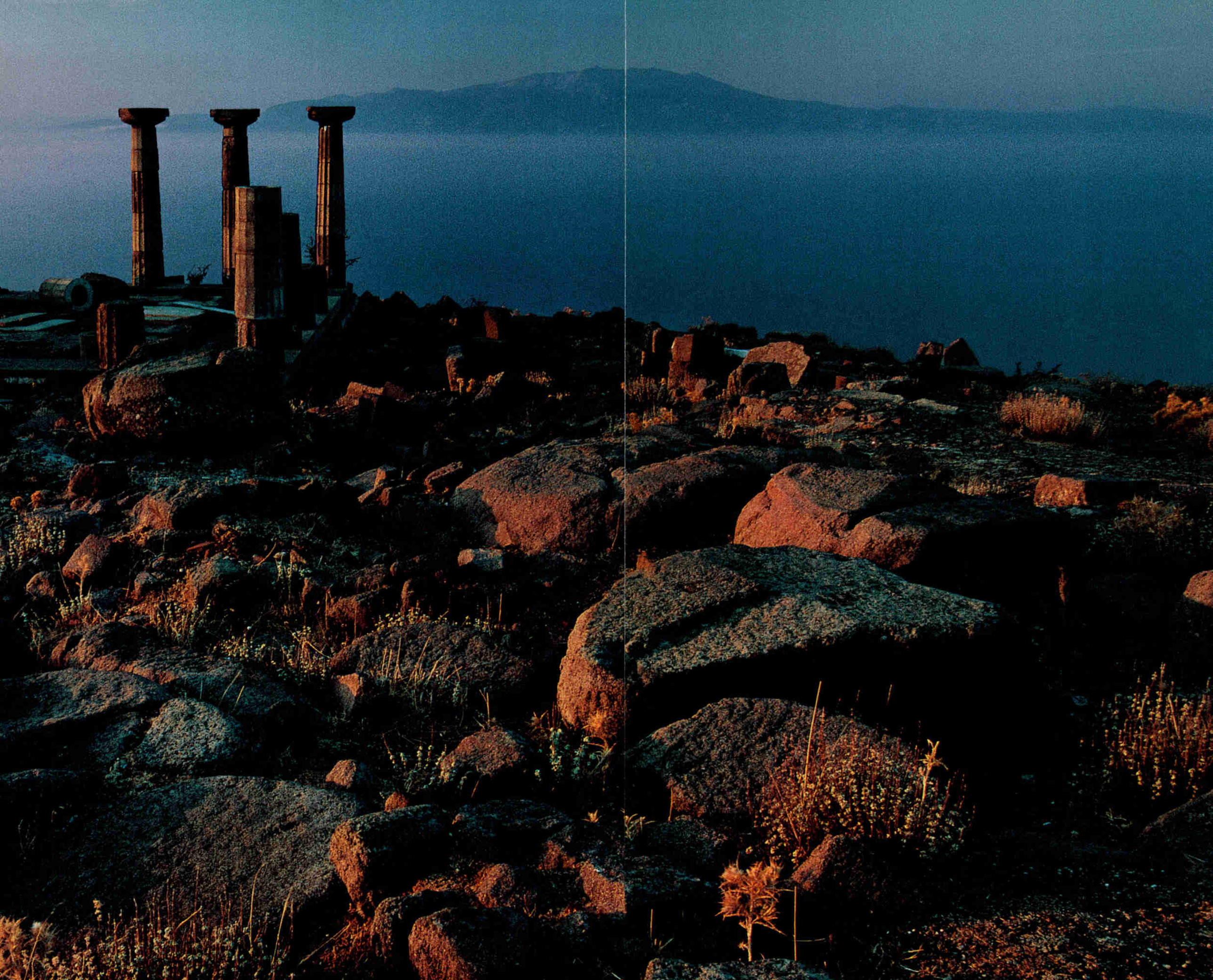
Rising as if to buttress the sky, columns from the Temple of Athena in Assos grace the Turkish coast of the Aegean Sea. Symbols of the pride and reach of ancient Greece, temples honoring a host of gods arose in Greek city-states and colonies from Spain to the Black Sea. Most took root in the pivotal Archaic Age of the eighth through sixth centuries B.C. In the succeeding Classical Age, Greek cities continued as centers of creative energy where innovations in government, art, and science formed a base for Western culture as solid as pillars of stone.

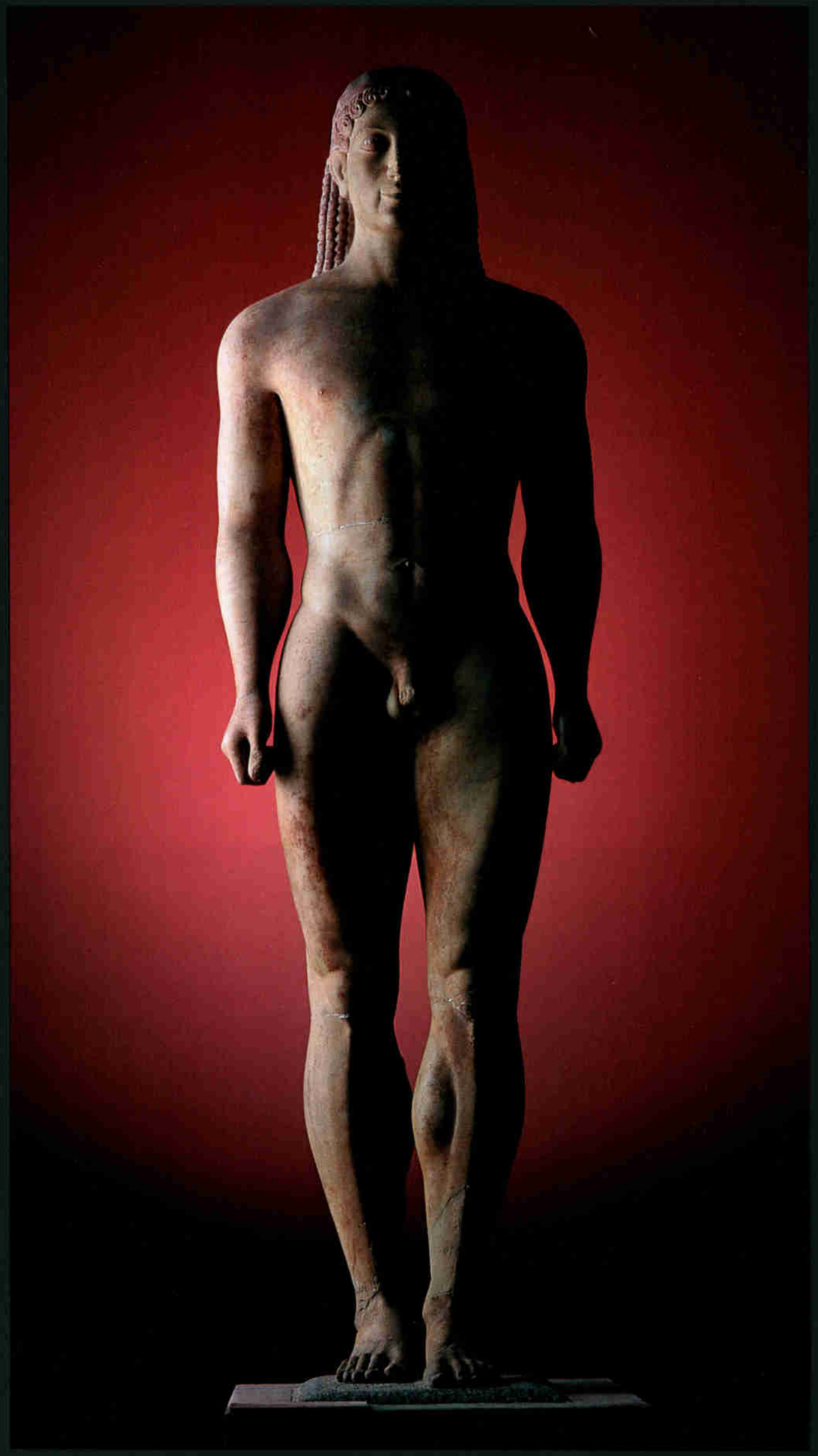
ASCENT *to* GLORY

ANCIENT GREECE PART II

By CAROLINE ALEXANDER

Photographs by JAMES L. STANFIELD







Slain in battle, immortalized in art, Kroisos of Attica lives on in sculpted perfection. Sensuous, smiling, and often monumental, such statues, called **kouroi**, *embodied the formative Archaic Age, when Greeks celebrated their shared culture and religion through Panhellenic festivals*

CA 520 B.C., NATIONAL ARCHAEOLOGICAL MUSEUM, ATHENS (LEFT)

like the Olympic Games. First recorded in 776 B.C., the Olympics still begin at Olympia with a flame-lighting ceremony. "It's very moving," says Maria Pambouki, who bears the torch (above). "I feel connected with the past, present, and future."

Mount Lykaion's conical peak was reached by a spectacular, intimidating drive that looped back and forth along an unpaved road bordered by sheer cliffs. At the summit the wind buffeted flowers and small butterflies and carried with it the scent of wild thyme. On all sides spread a grand vista of green-blue mountains, with yet more mountains unfolding behind them, and I felt uneasily close to a perhaps not friendly heaven.

Adorned in death with a sheet of gold, a soldier now unknown was honored with an elite burial near ancient Sindos. The clash of spears and swords rang throughout ancient Greece as rivalries between city-states led to frequent warfare. "It is a noble thing for a good man to die . . . fighting for his fatherland," wrote Spartan poet Tyrtaios. "Make life your enemy, and the black spirits of death dear as the rays of the sun."

CA 520 B.C., THESSALONIKI ARCHAEOLOGICAL MUSEUM

On the grassy slope below me was the god's precinct, a sacred spot, entered on pain of death. Indeed, worshipers of old believed that, once there, neither man nor beast could cast a shadow. In times past they had processed up this mountain in the night to reenact a ritual human sacrifice to their god—so ancient sources tell us. At the festive meal a person who chanced to eat human flesh mixed with the flesh of sacrificed animals would be turned into a werewolf, perhaps a sign of his inhumanity: Lykaion signifies wolf.

These enigmatic rites were celebrated not by an uncivilized people in a forgotten land but in the heart of Greece during its so-called golden age. The worshipers were not fringe cultists but respectable citizens worshiping Zeus, the king of the gods. In their way these rites were no more bizarre than countless mainstream festivals of the time: The Athenian Thesmophoria, for example, in which women carried up the decayed bodies of piglets they had tossed down into pits months earlier or the rites of the goddess Artemis at Brauron, in which little girls impersonated bears.

Like all periods of history the Classical Age of Greece, from about 500 B.C. until the death of Alexander the Great in 323 B.C., was complex and contradictory, a lusty mix of superstition and rationality, revolutionary concepts and centuries-old traditions handed down from preceding ages. Classical Greece is rightly regarded as a high-water mark of civilization, yet the living, breathing people who produced this culture were not—as it must sometimes seem to reluctant students of the humanities—busily intent on turning out masterpieces to adorn museums and libraries of the future Western world. Because so much of Western culture has its roots in classical Greece, it is easy to overlook the living context from which this heritage arose. We focus on what we know and edit away the features that strike us as bizarre or even repugnant.

The great masterpieces of ancient Greece are our heritage, but it is doubtful that any modern Western person can fully comprehend their background. How can we in the 20th century envision the magic spells of the sorceress Medea? Or the magic behind the routine spilling of animal blood as sacrifice? Or the use of curse objects to summon ghosts from the underworld to harm one's enemies? Yet these practices and beliefs, as much as the famous spirit of democracy and canons of beauty, were nerves and sinews of ancient Greek culture. To professional classicists this is old news, but to the layman these unfamiliar aspects of classical Greece are perhaps shocking. Unfamiliar too are those other centuries that set up and led to

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Author CAROLINE ALEXANDER and photographer JAMES L. STANFIELD worked together on the December 1999 article "Echoes of the Heroic Age," the first of a three-part series on ancient Greece.

the better known golden age. For these reasons I determined that when I traveled to Greece, I would travel all these eras as widely as possible. I would pay tribute to the Parthenon—but also examine the "voodoo dolls" in the Kerameikos Museum in Athens.

On the island of Euboea, north of Athens, an unusual site demonstrates that the golden age did not spring into existence fully formed but had been centuries in the making, from the end of the Mycenaean Bronze Age about 1100 B.C. until classical times. On a nondescript hillock overlooking the sea near the town of Lefkandi, a tenth-century B.C. burial was revealed when ground was bulldozed for a house. Unearthed were the remains of an elaborate cremation and burial uncannily like the burials of heroes described in Homer's *Iliad*. In addition to the deceased's bones, carefully wrapped in a piece of fabric and placed in an heirloom bronze urn, excavators found evidence of a building of striking size—about 160 feet in length—that had once covered the burial site.



Dating from the era traditionally known as Greece's dark age—some three and a half centuries that began with the collapse of the Mycenaean world—the Lefkandi finds were a reminder that however murky or "dark" this historical period may be to us, life went on. This was the period during which the Homeric masterpieces, the *Iliad* and *Odyssey*, were transmitted by oral bards; distinctive pottery with geometric patterns was made throughout Greece; and, as the Lefkandi site indicated, people built impressive structures and on occasion buried their dead in a manner befitting heroes. Like the carefully preserved bronze urn, two centuries older than the bones it contained, ideas—culture—were passed down.

"The political organization of the dark age can only be guessed at by what emerges at the other end," Anthony Snodgrass, a leading authority, told me in his office at Cambridge University. In the mid-eighth century B.C. there was an explosion of activity in most fields of human endeavor—an explosion greatly aided by the new political landscape. Instead of living in remote rural settlements or in the shadow of a great court, populations were beginning to gather in urban centers that had their own system of government and, more important, their own identity. Each little city-state, called a *polis* in Greek, with its surrounding territory had its own constitution. The best known polis is Athens, but throughout the Greek world, in isolated mountain fastnesses, on islands, and in valleys, people owed their allegiance to their polis. Cities vied with one another in war and peace: An athlete traveling to Olympia to compete in the Olympic Games went to represent not a nation but a polis.

Active engagement in the affairs of the *(Continued on page 120)*

Its grandeur undimmed by the traumas of nearly 25 centuries, the Parthenon—named for Athena Parthenos, the Virgin—gleams atop the Acropolis, heart of ancient Athens. Here the smoke of sacrificial fires rose in honor of the patron goddess of the city. Commissioned

in 447 B.C. by Athenian leader Pericles, the Parthenon celebrated the Greek victory over Persia in 480 B.C., early in the heady Classical Age, when Athens reached its peak. With brash foresight Pericles proclaimed, "The admiration of the present and succeeding ages will be ours."



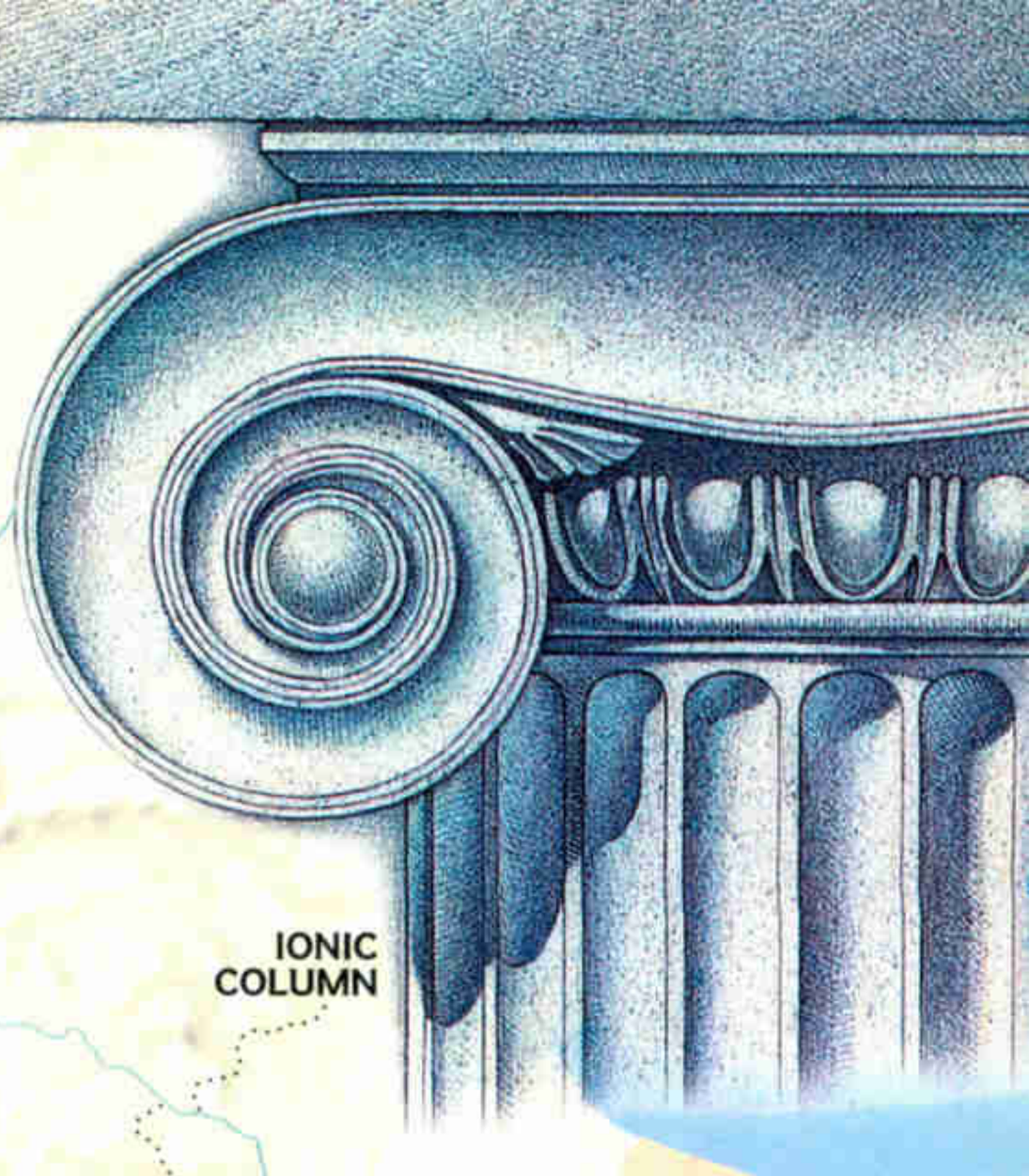
The Archaic Age was a time of immense vitality. Populations rose, trade flourished, and independent city-states emerged. Called a *polis*, each had its own laws, customs, and form of government. Many "mother cities," or *metropoleis*, founded colonies abroad to ease the demand for land and to boost trade. Through colonies Greek culture spread to a wider world.



NATIONAL GEOGRAPHIC MAPS
RELIEF BY JOHN A. BONNER AND TIBOR TÓTH
ART BY WILLIAM COOK

GLORY AND STRIFE

The improbable rout of the Persian Empire early in the fifth century B.C. set Greece on a path of glory both brilliant and brief. During this time were born the histories of Herodotus, tragedies of Sophocles, sculpture of Pheidias, and philosophical inquiries of Socrates. Athens ruled the seas as head of the Delian League, formed to battle Persians and pirates. Resentful of Athens's trade restrictions and rising imperialism, Sparta declared war in 431 B.C. For 27 years Greeks slaughtered and enslaved other Greeks in the bitter Peloponnesian War. Major naval losses at Syracuse and Aegospotami sealed defeat for Athens. She surrendered to Sparta in 404 B.C.



IONIC COLUMN

ILLYRIA
MACEDONIA
Epidamnus
Apollonia
ALBANIA
MACEDONIA
Sindos
Thessaloniki
Amphipolis 422
THRACE
Byzantium
Aegospotami 405
Cyzicus 410
CHALCIDICE
Spartolus 429
432-30
Cynossema 411
Mt. Olympus 9,570 ft + 2,917 m
Troy
TROAS
TURKEY
THESSALY
Assos
Agia Paraskevi
AEOLIS
Corcyra
GREECE
EPIRUS
AEGEAN SEA
Arginusae 406
Lesbos
PERSIAN EMPIRE
Artemisium 480
Olpae 426
Skyros
Phocaea
Thermopylae 480
BOEOTIA
EUBOEA
Delphi
Delium 424
Eretria
IONIA
SEA
Thebes
Lefkandi
Notium 406
Ephesus
Aegitium 426
Plataea 431
Megara
Marathon 490
Plataea 479
Samos
ACHAEA
Brauron
Mycale 479
Corinth
Salamis 480
ATTICA
Miletos
PELOPONNESE
Laurion
Olympia
Mantinea 418
Piraeus
Lade 494
Delos
Mt. Lykaion
Tenea
Athens
Halicarnassus
Bassae
ARCADIA
Paros
Taygetos Mts.
MESSENIA
Sparta
Rhodes
Sphacteria 425
LACONIA
Rhodes
CRETE
Knossos

In 490 B.C. resolute Greek soldiers miraculously defeated an invading Persian army at the battle of Marathon. After that famous victory many Greek states united against the "barbarians." Persia attacked again in 480 B.C. But Greek successes at Salamis, Plataea, and Mycale thwarted the Persians and led to a sense of Greek invincibility.

MEDITERRANEAN SEA

city-states ensured an aggressive, opinionated citizenry—one of the great strengths of ancient Hellas, as Greece was then known. A surge in commercial activity around the Mediterranean meant new business opportunities for the entrepreneurial common man as well as the aristocrat, producing a fledgling middle class. Emigrants from a common mother polis seeking land or raw materials for trade formed colonies abroad.

THE ISLAND OF SAMOS is mountainous and wooded; a short distance inland from the coastal road is a beautiful and mysterious forested region known locally as Paradise. When I visited in late summer, the high-pitched pulsating song of cicadas made the air reverberate and crackle as if with a live wire, and I constantly felt I was approaching a dangerous high-voltage zone. This island, so far in the eastern Aegean that the Turkish mainland is but an hour or two away, is a vivid reminder that the "miracle of Greece" did not arise only in classical times or only in Athens. The preclassical era, best known as the Archaic (literally "old") Age, dates from the end of the dark age around 750 B.C. until about 500 B.C. It is a period that many people find as rich and significant as the more famous Classical Age.* Samos in late Archaic times was at a zenith of wealth and innovation, thanks to its large navy and the leadership of its able tyrant Polykrates.

"I have dwelt longer on the affairs of the Samians, because three of the greatest works in all of Greece were made by them," Herodotus declares in his *History,* written in the mid-fifth century B.C. One of these works, a 3,400-foot-long tunnel cut through a mountain to carry water, is one of the most remarkable engineering feats of antiquity. Lit now by electric light for visitors, it runs in two tiers through dank stone. Built under the direction of Eupalinos from Megara, it is the kind of technically sophisticated feat associated with the Romans, not with preclassical Greeks.

But I had come to Samos specifically to see a technical feat of a very different kind—a single statue—and now, in the island's archaeological museum, I confronted openmouthed the father of all *kouroi*—a 16-foot giant carved of black-veined marble. ("Be sure to look at his buttocks," an admiring female archaeologist had counseled me.)

Kouros and *kore* (the male and female terms for "young person") statues in stone and, much more rarely, in bronze are found by the hundreds and have come to symbolize the Archaic Age. With their rigid posture and stylized walking gait, they are reminiscent of Egyptian figures; yet their smooth beauty and enigmatic Mona Lisa smiles are all their own. Fresh, spritely, optimistic, they are the essence of youth—or perhaps of the vigorous new time for which they were made.

"It speaks of Egyptian influence," said Martin Kreeb, an archaeologist at the German Archaeological Institute in Athens. "There is no monumental sculpture in the preceding age, only small bronzes. The kouros arrives full-blown." In Samos the unknown sculptor had felt free to experiment and produce a colossus. This freedom of experimentation is characteristic of the times, as if the new political climate that allowed greater individual expression had carried over to art and literature. Indeed, it is in this period that poets step forth and speak with distinct, individual voices.

"I am two things," wrote soldier-poet Archilochos of Paros in the

*Periods of early Greek history are explored in "Ancient Greece," a map supplement to the December 1999 NATIONAL GEOGRAPHIC.

With a tortoise-shell lyre and a libation of wine, a youthful Apollo appears on a cup, itself likely used for the fruit of the vine. God of oracles, music, and light, Apollo was one of myriad deities believed to oversee everything from flocks to fertility. Greek leaders sought the advice of Apollo's sacred oracle at





480-470 B.C., DELPHI ARCHAEOLOGICAL MUSEUM

Delphi before founding colonies or waging war.

Also revered was what Sophocles called "our sweet silvered wet nurse," the olive tree. Its fruit and oil—used for food, fuel, and trade—were so vital that killing a tree brought a death sentence. Farmers today still pray for bounty as they prepare for a harvest as old as time.



The clatter of painted hooves echoes ancient sacrifice as a garlanded bull is paraded through the streets of Agia Paraskevi on the island of Lesbos. Headed for slaughter on Mount Tavros ("bull mountain"), the animal will be butchered, boiled, and eaten as part



of an annual festival honoring St. Charalambos, said to have saved a local farmer from a bandit's bullet some 200 years ago. In thanks for that act of mercy villagers host four days of drinking, dancing, feasting, and horse racing—a bacchanal worthy of the gods.

mid-seventh century B.C., clearly identifying himself, "a fighter who follows the Master of Battles, and one who understands the gift of the Muses' love."

Unlike Homer, the great master of the dark age about whom nothing is known, poets of Archaic times declaim their passions and whims, loves and dislikes in intensely personal lyric verse. Sappho, a poetess from the island of Lesbos, writing in the early sixth century B.C., describes her intense jealousy on watching a man talk to the woman she loves:

Like the very gods in my sight is he who
sits where he can look in your eyes, who listens
close to you, to hear the soft voice, its sweetness
murmur in love and
laughter, all for him. But it breaks my spirit;
underneath my breast all the heart is shaken.

Similarly, pottery pieces signed by the artists who painted them appear for the first time in the eighth century B.C. Such signature statements—"Ergotimos made me"; "Kleitias painted me"— show that although masses of clay pots were churned out of local workshops, there was still a place for individual artistic pride. While we tend to think of the famous Greek vases of antiquity as being "classical," in fact the finest examples were produced during the Archaic Age. Corinthian potters made the first vessels with black figures painted on the natural color of the clay, forming elegant silhouettes. In approximately 530 B.C., however, a new technique was invented in Athens by the Andokides Painter (so named because he was the artist of choice for the potter Andokides). Reversing the color scheme, it was now the background that was painted glossy black, and the figures—the focus of the artist's attention—remained the red of the clay.

The new red-figure style allowed more lifelike details and was quickly exploited. Working around 510-500 B.C., the painter Euphronios was the first to make a study of anatomical detail. "Euphronios and his circle of pioneers show a clear interest in musculature," said Gloria Ferrari Pinney, a classical art historian at Harvard University. "And in other respects—experimentation with perspective, depiction of fleeting gestures—there is a sense that red-figure artists were moving toward realism."

Nude and enticingly aloof, Greek kouroi *"were intended to be erotic," says sculpture expert Andrew Stewart. On kouroi and sculpture of later periods eyes, lips, nipples, and hair were painted. Female statues,* korai, *usually were clothed. Computer colorization of a sixth-century B.C.* kore *found in Athens (right) gives a plausible portrait of the lavish patterns, colors, and jewels that would have made her pleasing to Athena.*

THE ARCHAIC AGE ended in the early fifth century B.C., when a threat from abroad compelled many city-states to look beyond their own small territories to their collective welfare. Across the Aegean, Persia, one of the mightiest empires in the world, had slowly been expanding westward. In 499 B.C. Greek settlements along the Ionian coast (now part of western Turkey) revolted, and Persia quickly brought them back to heel. Athens and Eretria supported the abortive rebellion, and soon the wrath of Persia's ambitious king, Darius, was directed toward them and their neighbors.

The Persians invaded in two waves, in 490 B.C. under Darius and ten years later under his son and successor, Xerxes. Many city-states quickly capitulated to the Persian force, but others united to stand fast in battles that have come to symbolize heroism and resolute liberty. Marathon, Thermopylae, Salamis—the sites of these battles are still well-known. From the marshy plain at Marathon in eastern Attica, so the story goes, a breathless runner raced to Athens to bring word of the enemy's defeat—and then died of exhaustion. Between the rocky hills and the sea at Thermopylae the Spartans, true to their warrior code, battled to the last man, holding a critical pass long enough to enable their allies to assemble. They fought "with

ARCHAIC AGE
ca 750-ca 500 B.C.

A youth from Tenea (ca 550) stands with the rigid confidence of a *kouros,* dominant sculptural form of the Archaic Age. These stylized statues defined the Greek ideal of humanity at its apex: young, beautiful, free, and male.

CLASSICAL AGE
ca 500-323 B.C.

The flexed knee, turned head, and contemplative expression of the "Kritios Boy" (ca 480) suggest motion and thought—hallmarks of a more naturalistic style that humanized classical works.

HELLENISTIC AGE
323-31 B.C.

Drooping in drunken oblivion, the exquisitely uncouth "Barberini Faun" (ca 200) typifies a politically unsettled age, when art's form and function were as varied as the far-flung cities of the Greek world.

ARCHAIC SCULPTURE
STAATLICHE ANTIKENSAMMLUNGEN UND GLYPTOTHEK, MUNICH, CHRISTA KOPPERMANN

CLASSICAL SCULPTURE
ACROPOLIS MUSEUM, ATHENS, NIMATALLAH, ART RESOURCE, NEW YORK

HELLENISTIC SCULPTURE
STAATLICHE ANTIKENSAMMLUNGEN UND GLYPTOTHEK, ET ARCHIVE, LONDON/SUPERSTOCK

KORE
ACROPOLIS MUSEUM
COLORIZATION BY DOUG STERN
CONSULTANT: KENNETH D. S. LAPATIN, BOSTON UNIVERSITY

swords," as Herodotus wrote, "yes, and with their hands and their teeth." And in a suburb of the modern port of Piraeus, I looked down through a chain-link fence on the strait of Salamis, where big tankers lumbered out to sea. From the same heights, in 480 B.C., Xerxes had watched with horrified disbelief as his mighty navy was pounded by the Greeks.

"These things one should say by the fire, in the season of winter, resting at ease upon one's couch when dinner is over," wrote Xenophanes, the philosopher, in extreme old age. " 'Tell me, how old were you then, when the Persians came into our country?' "

The improbable victory over Persia was a landmark in the Greek psyche. It gave rise to a newfound confidence in the possibilities of being both mortal man—and Greek. If Greeks could thwart the most powerful and wealthy nation on their horizon, anything might be possible. In modern terms it would be as if the United States had been routed by a Caribbean coalition. Intellectual groundwork laid in the Archaic Age was now confidently exploited to the full. Philosophy, art, theater, politics—everything was transformed in this heady new era.



SITTING under the night sky one evening, I watched the ancient Acropolis, picked out by floodlight, loom out of the modern Athenian skyline. It is perhaps the most overused image in the world, this assemblage of classical silhouettes on the familiar bare outcrop of rock; yet the pride in its construction is still palpable, almost 2,500 years later.

The Acropolis was the result of an ambitious plan to rebuild Athens after it had been sacked and burned by Persian invaders. With her rival Sparta, Athens had become one of the dominant city-states of the mainland during the late Archaic and was a principal player in the war against Persia. Two years after the battle of Salamis, in 478 B.C., an alliance of Greek states was formed to guard against future Persian aggression. As leader of the Delian League, named after its headquarters on the sacred island of Delos, Athens gained increasing power over Greek affairs. Her prestige and treasury flourished, enabling Athens to realize the dream of becoming the most resplendent city in Hellas.

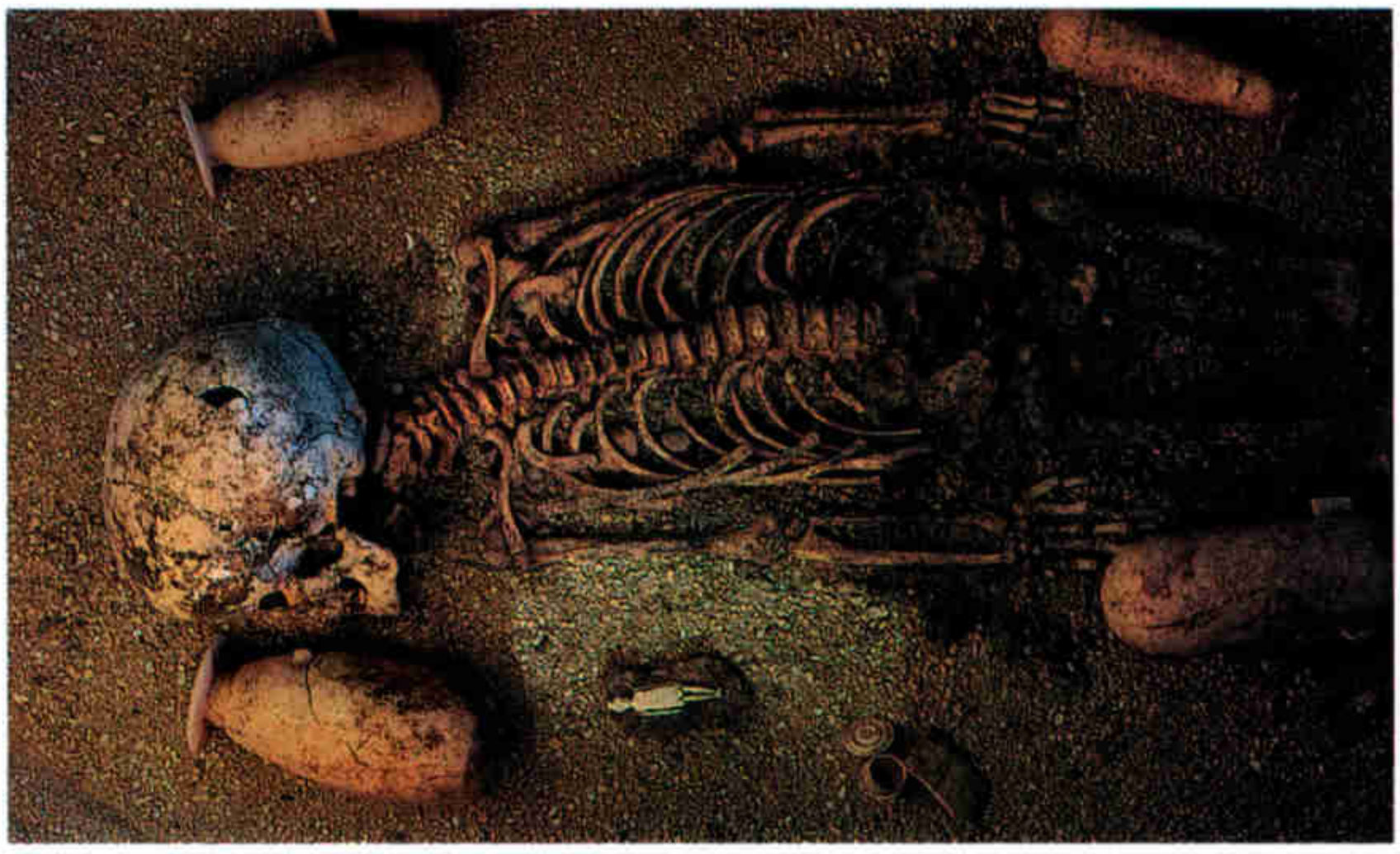
Classical literature gives glimpses of the ancient, bustling city: "I was going from the Academy straight to the Lyceum intending to take the outer road, which is close under the wall," Socrates says in one of Plato's dialogues. "I came to the postern gate of the city, which is by the fountain of Panops." With a map from any modern guidebook, one can stroll through the remains of the city, tracing old walls, ambling through the marketplace, climbing the hills that held the popular Assembly and judicial court, looking at temples, or peering at tombstones in the Kerameikos cemetery.

"You will find everything sold together in the same place in Athens,"

wrote one Greek poet, describing the Agora, which was both marketplace and political center. "Figs, witnesses to summonses, grapes, turnips, pears, apples, givers of evidence, roses, medlars, porridge, honeycombs, chickpeas, lawsuits . . . lambs, water clocks, laws, indictments."

Of all parts of the ancient city, the Acropolis has survived most intact. Although there are four important classical buildings on this natural citadel, it is the Parthenon that inevitably receives the most attention. Dedicated to Athena Parthenos, the Virgin, it served as both a temple and the treasury of the Delian League. A heavy iron grid spanned the interior where the treasure was stored, safely apart from the general public.

The Greek temple is one of the most influential of all architectural creations, still used today, particularly in official or state buildings. It would be difficult to imagine the capital city of the United States without its many Greek features, including the Capitol itself, with its columns and pediments. Clay models from the eighth century B.C. show that early temples resembled houses with steep pitched roofs and had columns only at the



Tender words warm the chiseled stone of a fifth-century B.C. grave stela in Athens (facing page): "I am holding here the child of my daughter, the beloved whom I held on my lap." The inscription gives voice to a woman who likely lived as did most Greek women—quietly within her home, denied civic rights. Equally dignified in death, a girl from Thessaly faced eternity with an ivory doll and vessels that may have held perfume.

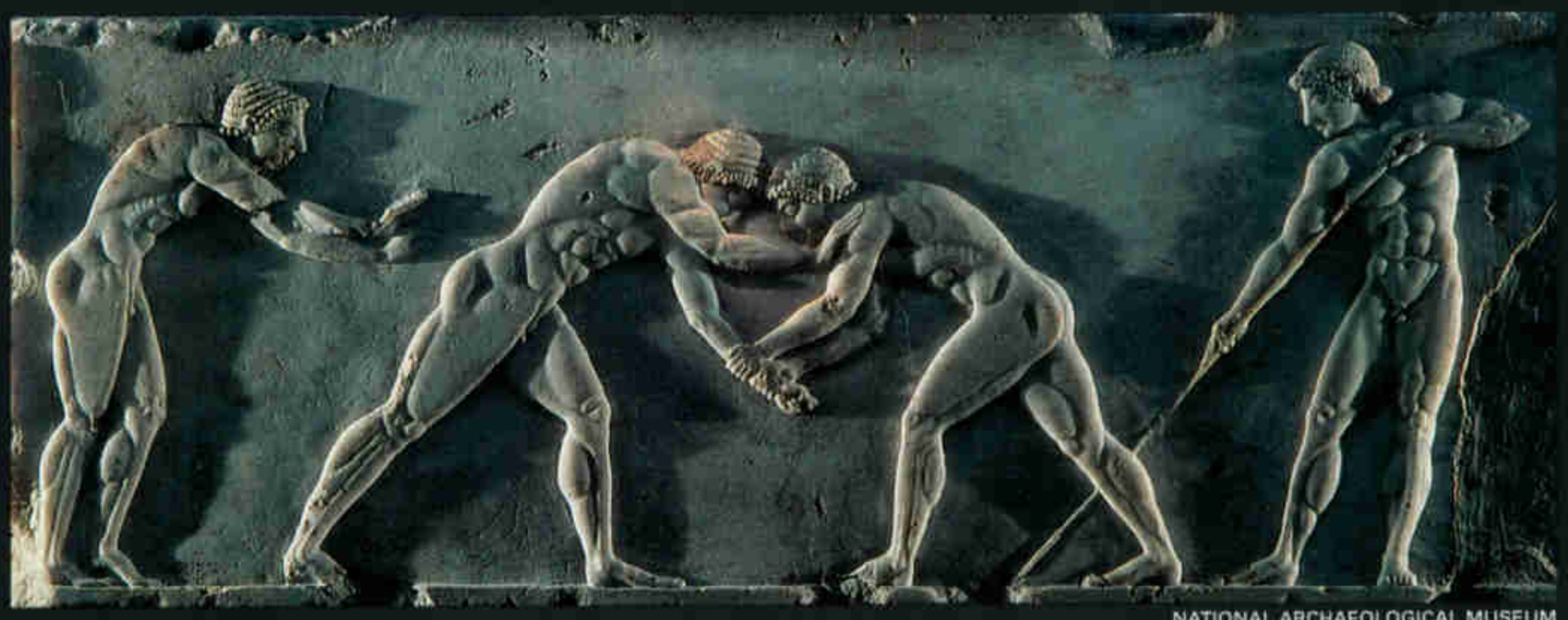
KERAMEIKOS ARCHAEOLOGICAL MUSEUM, ATHENS (FACING PAGE); ATHANASAKEION ARCHAEOLOGICAL MUSEUM, VOLOS

entrance or the rear. Over time two great architectural styles evolved: the older Doric order, with muscular, unadorned columns, and the more "feminine" Ionic style, whose slender columns were lightened by graceful decorative curves on their capitals.

The Parthenon is considered the Doric temple par excellence, pulled together by a kind of Dream Team of genius: Overseen by Pheidias, one of the greatest sculptors ever, at the instigation of Pericles, Athens's most brilliant statesman, its architects were the well-known Iktinos and Kallikrates. The Parthenon had another advantage over other temples—it was built of marble. The same Iktinos who designed the Parthenon was also responsible for a temple dedicated to Apollo Epikourios at Bassae in the remote mountains of the Peloponnese. In its way this small gem was as innovative as the Parthenon—but built of local gray limestone, it is now crumbling from within.

"They didn't know how it would be," the guard on site told me, pointing to the protective scaffolding and tent that shroud the temple. "They just used the stone they found here—it looked all right." Similarly, the great temple to Zeus at Olympia, whose pedimental sculptures rival those of the Parthenon, is built of shell limestone that, although standing firm, has

A path once pounded by sprinting feet lies quiet at Olympia's palaestra (above), training ground for wrestlers who sought the coveted olive wreath—crown of Olympic victors. Held every four years to honor Zeus, the Olympics were the greatest of many games that showcased Greek passion for competition and glory. Rooted in training for war, physical fitness was so vital to education that most cities sported



NATIONAL ARCHAEOLOGICAL MUSEUM

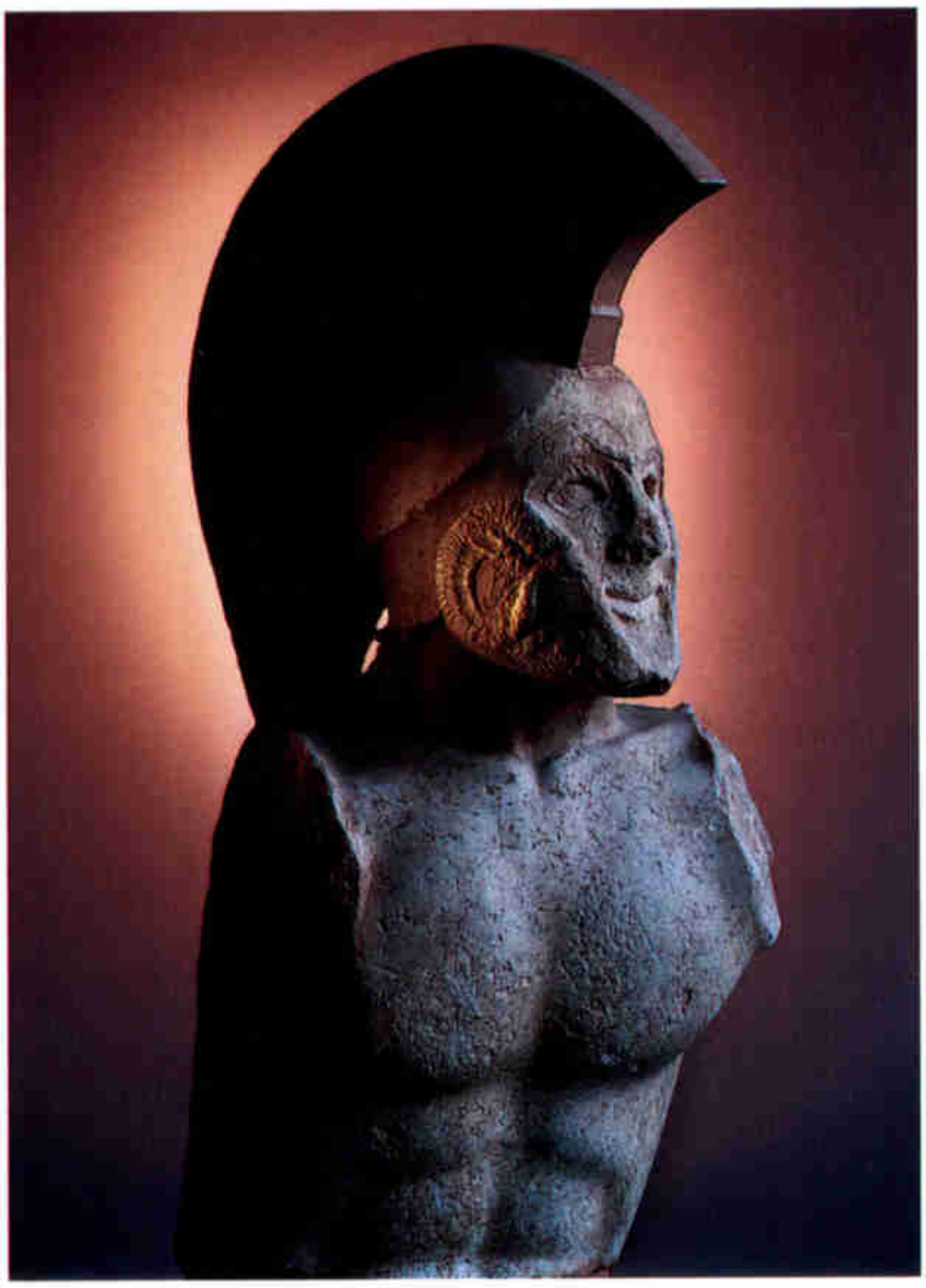
gymnasiums, where teaching and training were intimately entwined. Ancient athletes competed nude, as shown on a sixth-century B.C. relief (above). Modern champions like Olympic gold medalist Stelios Miyiakis and 16-year-old Michalis Vlachos, at right, train with the intensity of the earliest Greeks. Says Vlachos, "I am proud to continue the tradition of a sport mentioned by Homer in antiquity."



turned a dirty black with time; in antiquity it would have been veneered with stucco to look like white marble.

Temples were often displays for sculpture, both freestanding statues that perched on the pediments and relief panels carved in stone, forming friezes that ran around the buildings. Classical sculpture portrayed mankind with new maturity. As in the Archaic Age, youth was still idolized and idealized, but the kouroi had developed into a more naturalistic form.

"Of all the many wondrous things, nothing is more wondrous than man," sings the chorus in Sophocles' play *Antigone,* first performed in Athens in 441 B.C. Classical art echoed this tribute, portraying men and gods alike as idealized humans and thus elevating man to Olympian heights. Their faces seemingly remote and inscrutable, the statues suggest an enviable aloofness from the petty concerns of the world. For centuries museumgoers and historians have sung the rapturous praises of this Olympian hauteur and the purity of the sculpted forms. In particular, the "middle-distance" gaze of the statues' eyes was much admired for portraying this unconcerned sublimity. Alas, while some of these admired characteristics were genuine, some were an illusion created by an almost comical accident of time.



"People forget that Greek sculpture was often painted," exclaimed Chris Faraone, a professor of classics at the University of Chicago. "The eyes were painted, the skin and clothing were painted in bright primary colors that were fixed with a translucent wax covering, probably looking very much like the brightly colored plastic Madonna on my grandmother's dresser." Weathered by time, the statues acquired a wholly different character. The warm, gold marble of the Parthenon once sparkled with robust Mediterranean color, entirely in keeping with its noisy, energetic city.

In all of Athens few places were noisier and more contentious than the site of the ancient Athenian Ekklesia, or Assembly, the democratic voting body that governed the city's affairs. On a platform carved into a neighboring hill so as to stare the Acropolis full in the face, it is a charged location. Here before some 6,000 outspoken citizens, who usually voted by a show of hands, politicians argued and pleaded their causes. The art of rhetoric, or persuasive speaking, was so important that it became the cornerstone of a well-born Athenian's education.

Some form of democratic government existed in many city-states, but it was in Athens, by her own proud claim, that it reached its purest form. Lawmakers from the late seventh century B.C. onward had chipped away at the city's governing laws, gradually freeing working people from burdens of debt and serfdom to wealthy aristocrats. "I took away the mortgage stones stuck in the earth's breast," wrote Solon, the great social reformer of early

sixth-century B.C. Athens. "And she, who went a slave before, is now free." By the fifth century B.C. any citizen attending the Assembly had full freedom of public expression and power to vote. There was one catch: Only free males could participate. This excluded all women in the city as well as slaves, who made up perhaps one-third of the population.

"Men tended to marry at about 30, but age 14 was normal for an Athenian girl," said Sarah B. Pomeroy, a professor of classics at Hunter College in New York City. A man's bride was "still young enough for him to educate." Acceptable trades for women of lower classes included woolworking, nursing, breadmaking, and laundry services. Most respectable middle-class women, however, concerned themselves only with domestic affairs. In a treatise entitled *Oeconomicus,* or *Household Management,* written in 362 B.C., the historian Xenophon reports a conversation between Socrates—the great philosopher of enlightened inquiry—and one Ischomachus:

"I should very much like you to tell me, Ischomachus, whether you yourself trained your wife to become the sort of woman that ought to be, or whether she already knew how to carry out her duties when you took her as your wife from her father and mother."

"What could she have known when I took her as my wife, Socrates? She was not yet 15 when she came to me, and had spent her previous years under careful supervision so that she might see and hear and speak as little as possible."

The lot of the city's slaves was even less enviable. While some domestic slaves were treated as members of the household, industrial slaves suffered brutal conditions: In the silver mines of Laurion, which produced the metal for Athens's coinage, slaves worked on their bellies in suffocatingly narrow passageways. Employed for all forms of work—agricultural labor, domestic chores, schoolteaching, entertainment—they were generally the captives of war, of pirate raids, or of organized slave trade and were sold in open markets. Slavery was not always for life, however, and it was not uncommon for a slave to buy or be given freedom.

YET FOR ALL THESE LIMITATIONS Athens's imperfect democracy created a society as open as had existed anywhere to that time. Wealthy, confident, and powerful, with an estimated population of 150,000, she attracted philosophers, scholars, and poets from all over Greece. Even from a modern retrospective view of almost 25 centuries, there have been few places on Earth as creative and electric as Athens in her golden age.

Athenian pride was given eloquent expression by the statesman Pericles on the occasion of a state funeral for warriors killed in the city's war with Sparta, which eventually ended in Athens's defeat.

"Our constitution does not copy the laws of neighboring states," Thucydides, the historian, reported Pericles as saying. "We are rather a pattern to others than imitators ourselves. Its administration favors the many instead of the few; that is why it is called a democracy. If we look to the laws, they afford equal justice to all in their private differences. . . . In short," he sums up, "I say that as a city we are the school of Hellas."

Not everyone in Hellas thought so. Sparta, the state that dominated the southern region known as the Peloponnese, was established along very different lines. Controlling more territory than any other polis in Greece, Sparta had subjugated an area called Messenia, which accounted for much of the western Peloponnese, and compelled its population to become her

A Spartan warrior fixed in stone evokes King Leonidas, who claimed bloodlines to the Greek hero Heracles —and proved worthy of his legendary kin. Weaned on war, Spartans led Greek allies against Persian invasions. With a few thousand soldiers, including 300 hand-picked Spartans, Leonidas faced enemy hordes at the pass of Thermopylae. Knowing death was near, the Spartans "fought with fury," wrote Herodotus. Leonidas and his 300 countrymen fell but rose in lasting fame.

CA 480 B.C., SPARTA ARCHAEOLOGICAL MUSEUM

helots, or serfs. In the mid-seventh century B.C. the Messenians, who greatly outnumbered the Spartans, revolted, only to be revanquished by their overlords. The Spartans, taking the revolt as a warning, modified their political system to ensure that such a threat would never arise again. The result was a totalitarian, militaristic state with one aim—to produce the best warriors in all of Greece.

To the west of Sparta's ruins rise the Taygetos Mountains, an impressive range riven with a foreboding gorge that serves as a reminder that the rigors of Spartan life began at birth. On the afternoon of my visit sunlight sparkled through leaves and flowers, but as it moved up into the gorge, the light became lost in the deep shadows of the lowering cliff face, as if the mountain had swallowed it. From a path running beside the gorge, I watched a lone butterfly negotiate the perils of the abyss. It was somewhere up here that newborn Spartan males deemed too weak or imperfect to be useful to the state were exposed to die. Boys who were allowed to live were separated from their parents at age seven and raised in barracks. In the nearby sanctuary of Artemis Orthia, Spartan youths underwent endurance tests, including punishment by flogging.

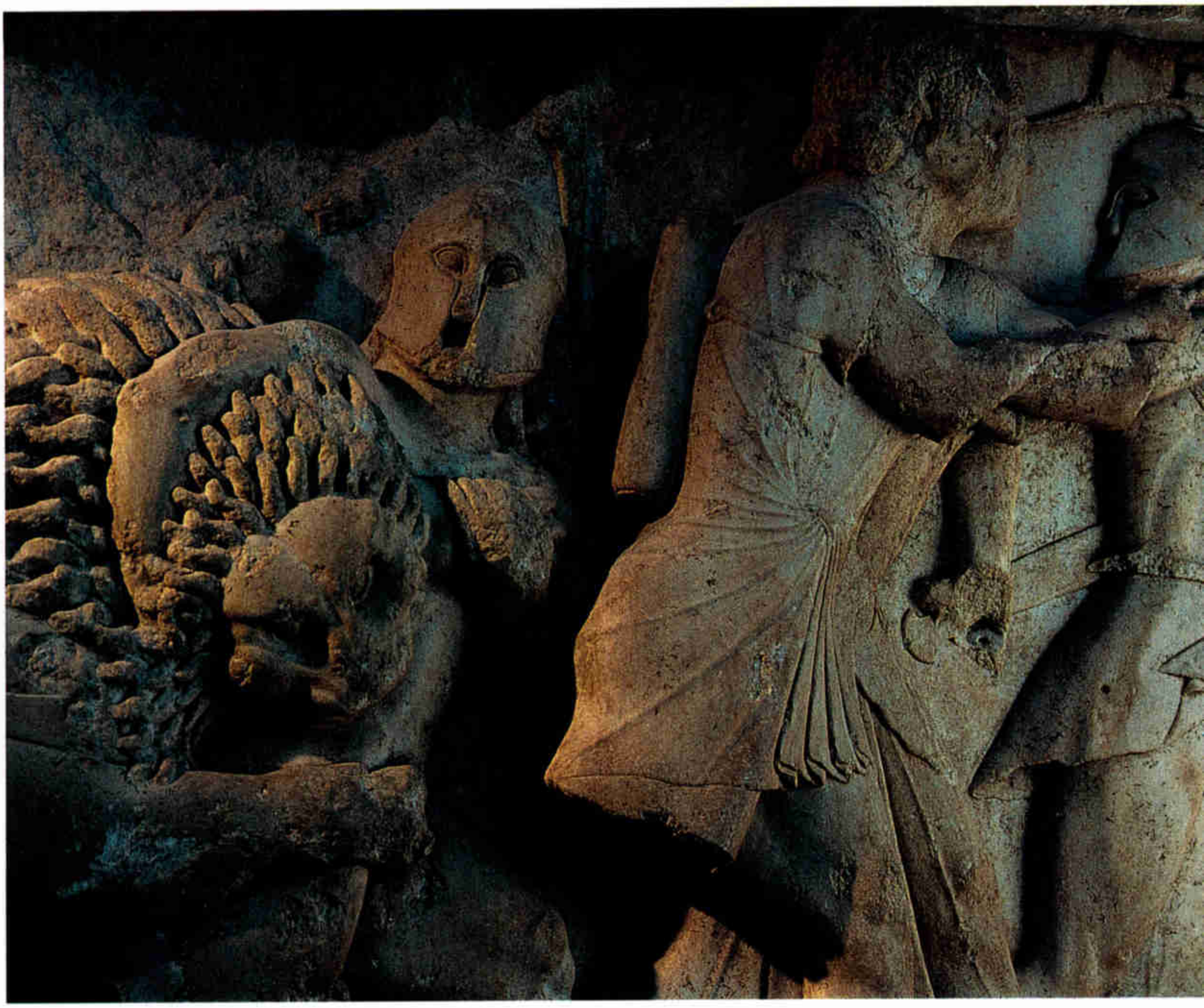


Regal ruins mark a palace at Persepolis, a royal site founded by King Darius I of Persia, who once hoped to conquer Greece. The dream was dashed at the strait of Salamis by a fleet of Greek triremes. Fast and agile, with a curved stern and a bronze-tipped ram on the bow, these rowed wooden warships raced toward battle and deftly pierced enemies' hulls. The replica Olympias, *in dry dock near Athens, recalls a victory that launched that city into its golden age.*

Spartan women had considerably more freedom than women in other cities; they alone of Greek women participated in their own athletic games, for example, naked like the men. Ultimately, though, a woman's worth was judged by the quality of children she produced. On her wedding night a Spartan bride had her hair cropped and was dressed in man's clothing so as to appear as boyish as possible; after the marriage was consummated, her husband returned to his barracks. Homosexuality was a norm among Spartan men—and perhaps women too—as it was in aristocratic circles in general throughout Greece, and particularly in the military. (The Sacred Band, the warrior elite of Thebes in Boeotia, northwest of Athens, ranked second only to Sparta's warriors and was made up of homosexual couples, the rationale being that a man would fight more fiercely for his lover's life than for his own.)

Conservative, inward-looking Spartans regarded the cosmopolitan, permissive Athenians with suspicion and contempt. Old ways died hard in the mountainous stronghold of the Peloponnese; it was in Peloponnesian Arcadia that the werewolf cult of Zeus Lykaios was practiced.





BUT OLD WAYS DIED HARD too in sophisticated Athens. In the same city where Socrates held his popular informal inquiries into the rational basis for ethics, friendship, love, and justice, the practice of magic and spellmaking was widespread. "And then there are the begging priests and soothsayers," wrote Plato in *The Republic,* "who, going to the doors of the wealthy, persuade them that . . . if anyone wants to harm an enemy, they, the soothsayers, at very little expense will do it with incantations and binding spells." Numerous examples of binding spells, scratched on lead objects, have been recovered from all over Greece—but the largest number from the classical world have been found in Athens.

David Jordan, an expert on ancient folklore and magic at the Canadian School of Archaeology in Athens, met me in the ancient Kerameikos cemetery. From the street of tombs outside we entered the small museum, passing grave stelae with their touching inscriptions and elegant images of the dead, until we came to a glass cabinet. Following Jordan's pointing finger, I saw a small doll made of lead lying in a miniature lead coffin. The figure's arms were pulled back, as if tied, and a man's name was inscribed on its leg. With eight others, named on the coffin lid, the man was due to appear in a public trial. The figure had been placed in a grave, possibly to attract the attention of Hades, lord of the underworld. Other favorite places for curses



Gods, gore, and heroic acts proved popular themes in Greek art. On a frieze at a treasury building in Delphi, a warrior screams in the grip of a lion while Apollo and Artemis lunge at a foe—part of the myth of how Olympian gods defeated the Giants for supremacy. Some interpret this as a tale of Greek triumph over a barbaric world.

525 B.C., DELPHI ARCHAEOLOGICAL MUSEUM

included inside wells and sanctuaries and outside theaters, and the curses ranged from love spells to spells purchased by potters, tavernkeepers, and shop owners against business rivals.

"Most curses we have found are against opponents at law," said Jordan. Then, as now, the democratic principles that fostered individual expression seem also to have led to an overly litigious nature. John Gager, a scholar of ancient magic, observes that "with the possible exception of modern America, no society has been more notorious for litigation than classical Athens." A typical legal curse: "I inscribe Selinontios and the tongue of Selinontios, twisted to the point of uselessness."

Many Athenian festivals offer other striking examples of traditions seemingly at odds with the city's reputation as a center of enlightenment. In the rural past, agricultural festivals had punctuated the farmer's life, creating welcome occasions for feasting and celebration, along with religious ceremonies to the gods who provided the harvest. As life became more urban, these old festivals were brought into the city and made more elaborate. Overseen by the state, they became public statements of civic pride while still preserving old ritual elements. In the Thesmophoria, a three-day festival promoting fertility, dignified Athenian matrons erected bowers made of branches, where they sat on the ground during a day-long fast. On the third day they brought up the putrefied remains of piglets that had been sacrificed to the goddess Demeter and cast into pits months before. These were solemnly laid on altars along with grain offerings.

Enlightened Athenians not only retained old traditions, but their capacity for openness and innovation was limited. No event illustrates this more dramatically than the fate of the philosopher Socrates at his city's hands. Born in 469 B.C. into a middle-class family, Socrates had demonstrated his patriotism by serving with courage in several significant battles. Early philosophers of the Archaic Age, such as Thales of Miletos and Herakleitos, had begun to attempt analytical explanations for such mysteries as the nature of the universe, the origin of life, and the nature of the soul, hitherto explained only by myth. Socrates initially followed these lines of philosophical-scientific inquiry but moved on to ethical questions.

While Socrates himself left no written record, his younger student Plato did. The dialogues of Plato are reconstructions of Socrates' gently ironic cross-examination of friends and acquaintances on a range of subjects, from the nature of friendship to the ideal organization of a just state.

"I have heard Pericles and other great orators, and I thought that they spoke well," says a character in Plato's *Symposium*. "But . . . my soul was not stirred by them, nor was I angry at the thought of my own slavish state. . . . he [Socrates] makes me confess that I ought not to live as I do, neglecting the wants of my own soul."

A reputation for both personal and intellectual integrity, a famous sense of humor, and the novelty of his examinations drew to Socrates a following of wellborn young men interested in public affairs, some of whom had been hostile to Athens's democracy. But the decision to bring Socrates to public trial in 399 B.C. on fuzzy charges of "corrupting the youth" and "worshiping new gods" was probably based on nothing specific. More likely, as Socrates pointed out in his trial, people were threatened by his self-appointed role as "the gadfly of Athens," constantly provoking people to examine conventional wisdom by methodical inquiry, to distinguish truth from mere belief. Found guilty by the jury, which advocated the death penalty, Socrates was invited to suggest an alternative punishment.



Synchronized chaos and the deafening din of bells draw revelers to the streets of Skyros for the annual goat dance, a pre-Lenten carnival with hints of ancient fertility rites. Clad in stifling pelts, kidskin masks, and loops of metal goat bells totaling a hundred pounds or



more, celebrants fueled by ouzo stomp and sweat through the night. "When I dance, I always have in my mind Pan and Dionysus," says veteran goat dancer Yiannis Eugenikos. "It's the only time we're absolutely free to show our strength, our tenacity, our sexuality."

Reflecting that his whole life he had urged people to seek virtue and wisdom over material self-interest, Socrates proposed that he deserved the same reward given to Olympic victors—maintenance for life by the state. Unamused, the jury enacted the death penalty.

The death of Socrates profoundly affected Plato and Socrates' other disciples. It also in its way conclusively marked the end of the golden age. Great philosophers, poets, artists, orators, and historians would come after, to be sure, but the heady, confident air of discovery and experimentation had passed.

The defeat of the Persians in 480 B.C., although achieved by united Greek effort, had not produced a united Greece. Old rivalries persisted. The treasury and authority of the Delian League, established for the common good of its member states, was increasingly subverted by Athens in the interest of her imperial ambitions. Hostilities with Sparta led to all-out war only 50 years after the battle of Salamis. Waged from 431 until 404 B.C., the Peloponnesian War drained the resources, energy, morale, and manpower of both states. A mysterious plague—variously identified by modern historians as everything from bubonic plague to Ebola virus—erupted in 430 B.C., ravaging Athens and taking the life of the statesman Pericles. After Sparta received money from her old enemy, Persia, Athens saw her mighty navy destroyed and her power broken in waves of disastrous battles. Finally, in April of 404 B.C., Athens surrendered to Sparta.

Unlike Rome, classical Greece left no legacy of a physical empire. Her legacy was more subtle—and more inescapable. For me, it is best characterized by one of the most haunting contributions to humanism, Greek tragedy. Originally performed at an Athenian festival honoring Dionysus, the god of wine and the exuberance of nature, these plays examined abiding mysteries of the human condition. Is a man's fate preordained? Which laws are higher—the civil laws of the state or the natural law of the gods? And who can be trusted to interpret these natural laws? What is the nature of justice? Is it vengeance? Or deliberation and weighing of evidence? What dark propensities lie within us? These are the questions examined through poetic language and gripping, popular drama by the great tragic poets, Aeschylus, Sophocles, and Euripides. "Far in the air of heaven, the sons of heaven live," sings the chorus in Euripides' *Bacchae.* "But they watch the lives of men. And what passes for wisdom is not; unwise are those who aspire, who out-range the limits of man." The tragedies, presented in trios, were always followed by a ribald comic play. Each series took an entire day. Sublime and profane alike were deemed a fitting and pleasing offering to the god Dionysus.

This public, popular searching for the boundaries of humanity before the eyes of a god, taking the profane with the sublime, seems to me the essence of the Greek miracle. Without this age of classical Greece, the political, moral, and cultural history of the Western world would be much the poorer. To paraphrase Winston Churchill's famous words, never has the history of so many owed so much to so few. □

Silvery tamata, *or votive offerings, hang in churches throughout Greece, akin to the pagan practice of leaving gifts to please the gods. Those gods could be cruel. In Euripides'*



play Bacchae, *Dionysus causes Agave of Thebes to unknowingly tear her son to shreds as punishment for denying the god's divinity. Pride, retribution, regret—such themes are eternal, says actress Micaela Esdra (facing page). Thus ancient Greek tragedy still haunts modern minds.*





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■ FROM THE GEOGRAPHIC ARCHIVES

Going Ape

Seeing her window of opportunity, a young gorilla bound for the St. Louis Zoo in June 1938 experiments with escape from the car of zoo director George P. Vierheller. She and her male companion had just been greeted by crowds at the train station "like movie stars," according to a local paper. The apes were captured in central Africa, then shipped to New York City, where they were met by Vierheller and loaded on a train to St. Louis. When the pair refused to remain in the baggage car, Vierheller allowed them to ride in his Pullman car. "Both were as tame as kittens, at least to all appearances," said press accounts. "But both wore collars and stout iron chains which their chaperons carefully held."

This photograph was published in the August 1940 issue to illustrate "Man's Closest Counterparts."

NATIONAL GEOGRAPHIC

Behind the Scenes











Not a Plain Brown Wrapper

When a member in Britain called to complain that his GEOGRAPHIC was mangled in the mail, we replaced it. But he wasn't satisfied—it was missing the brown outer wrapper. The man's son collects the artwork on the wrappers, which promote Society television films, and he didn't want to miss a month. The scratchboard prints are the work of Patrick O'Brien, a children's book illustrator and author in Baltimore. It's a challenge to pick the one image that can sum up a film. "I'm often asked to draw big ferocious teeth," Pat says. "Something to catch the eye!"











Prizewinning TV

Last fall NG Television brought home seven trophies from the 20th annual News and Documentary Emmy Awards. More honors awaited at the Jackson Hole Wildlife Film Festival, one of the world's top competitions for natural history films. Winners included *Dragons of the Galápagos, Dolphins: The Wild Side, The Secret Life of Cats, The Tigers of Kanha,* and *Rat.*

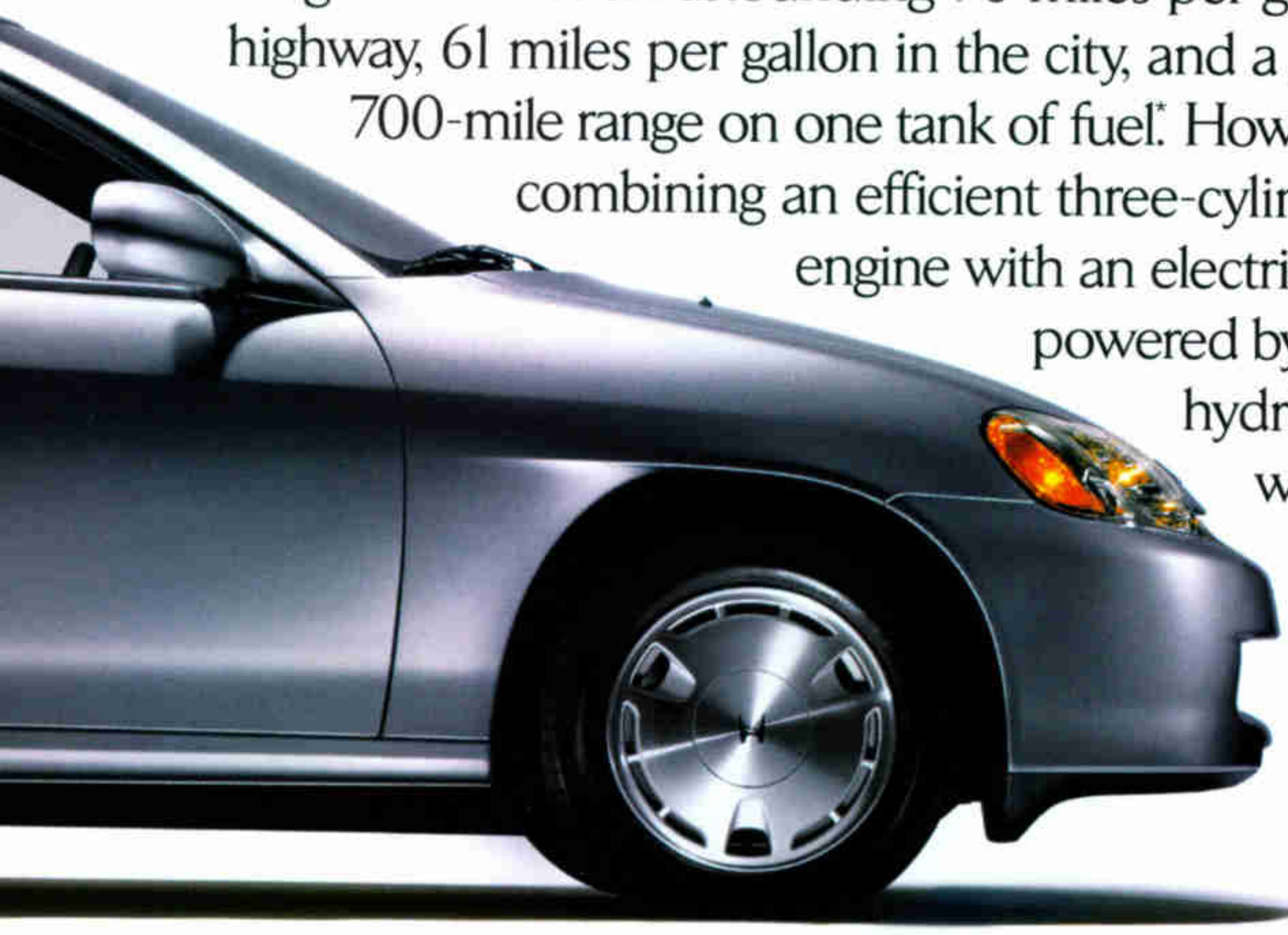


*Mileage figures based on EPA estimates. Actual mileage may vary. Range based on EPA highway mileage. †California Air Resources Board ULEV-certified for California and some Northeastern states. LEV-certified in rest of country. ©1999 American Honda Motor Co., Inc. www.honda.com

It's an environmental movement all by itself.

How many cars does it take to change the world? Just one, perhaps. Introducing the Honda Insight. It's America's first gasoline-electric hybrid automobile.

Nothing short of an engineering breakthrough, the new Insight achieves an astounding 70 miles per gallon on the highway, 61 miles per gallon in the city, and a phenomenal 700-mile range on one tank of fuel.* How? Simply by combining an efficient three-cylinder gasoline engine with an electric motor that's powered by nickel-metal hydride batteries which never need to be plugged in. Then add a lightweight body, and a world-class aerodynamic design, and you have the ultra-low-emission† Insight. It's the result of years of research and development into lighter, more fuel-efficient, cleaner cars. In other words, technology with a conscience. Then again, what else would you expect from a car powered by Honda?



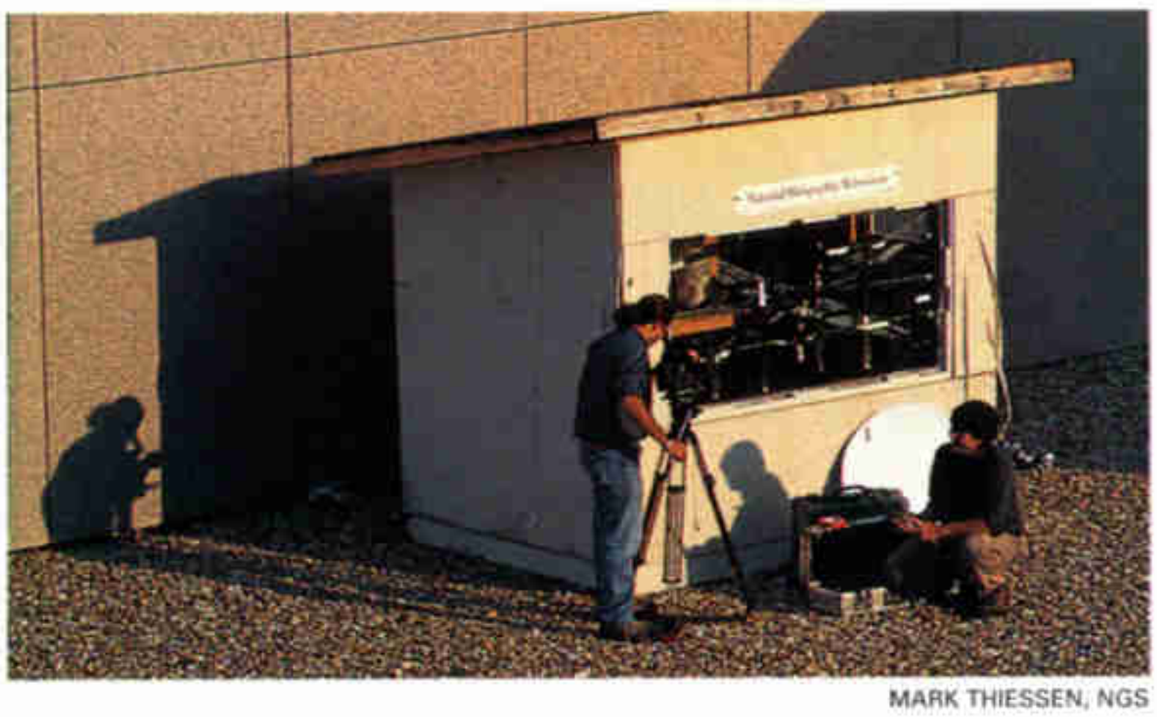
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ANNIE BOULAT

Like Father, Like Daughter

She got her first camera at age eight—a gift from her dad, French photojournalist Pierre Boulat. But when Alexandra Boulat grew up, he advised against a career in photography. Alexandra studied art instead and worked as a painter, but cameras were never far from her heart. "So I decided for myself to be a photographer," she recalls. This time Pierre supported her choice, and a busy career shooting news stories followed. Alexandra's first GEOGRAPHIC assignments, on Albanians and Kosovo, appear in this issue. Pierre's own GEOGRAPHIC story, on Carrara marble (July 1982), was a favorite of his. "He loved to be around artists," she says of her dad, who died in 1998, "because he was an artist too."



MARK THIESSEN, NGS

A Project for the Birds

Putting together *The Pigeon Murders*, an EXPLORER production about the mysterious poisoning deaths of the birds in New York City, was no easy flight for NG Television producers Sean Fine (left, standing with camera) and Jeff Morales. To learn about pigeons, they raised their own in a coop on the roof of Society headquarters. Though the plywood structure caused some grumbling among our high-rise neighbors, "we wanted to get close to the birds and film their babies," says Sean. The team watched over the birds for several months. Then, one day, the pigeons vanished. "A hawk might have eaten them," explains Sean, who had grown fond of his feathered actors. Or perhaps a critic of the project had intervened. The door of the coop was shut, barring the birds' reentry. One thing is sure, says Sean. "Nesting mothers would never voluntarily leave their eggs."

TEXT BY MAGGIE ZACKOWITZ

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Mean annual temperature



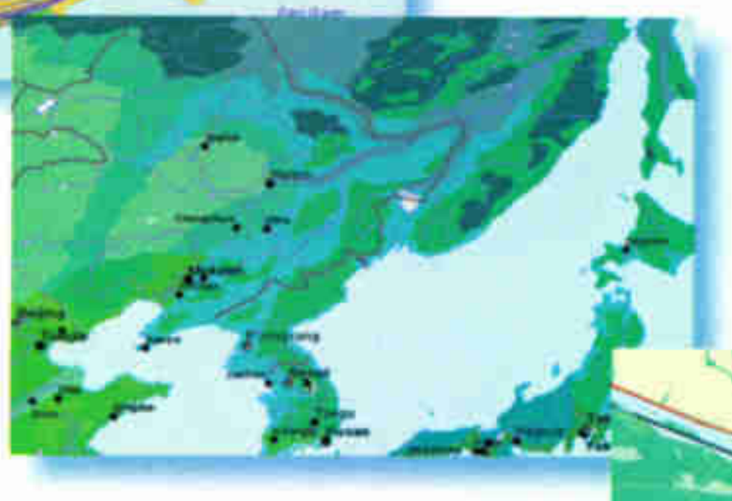
Earthquake epicenters in Latin America



Political map from *National Geographic Atlas of the World,* seventh edition, 1999



Manhattan street map



Vegetation zones in eastern Asia



Floodplains, confluence of Mississippi and Missouri Rivers



Satellite image of the Red Sea

The Ultimate Atlas

Imagine opening a world atlas and seeing yesterday's earthquake epicenters and this morning's weather systems. Imagine turning a page to see your city mapped in dozens of ways: school districts, crime patterns, ethnic populations, utility lines, property values. Imagine wielding a map tool that reaches out to sources around the globe and brings back the latest information on countless subjects.

This is the vision that led National Geographic and ESRI, the world's leading maker of mapping software, to begin work on the Map Machine, an interactive atlas on the Internet. By clicking on a simple world map, you can zoom in on and roam across continents, calling up maps and satellite images in dozens of forms, among them map plates from the Society's new seventh edition *Atlas of the World.* As place-names change and political boundaries shift, we'll update the atlas plates online. You can keep your atlas current by printing out revisions.

The Map Machine will transform your notions of what an atlas is about. A useful but static reference tool will become a gateway to an expanding universe of geographic information. To this end we will constantly retool our map engine, adding educational resources, new map layers, links to other sites, and treasures we have yet to imagine.

You can check out the Map Machine at *www.nationalgeographic.com/mapmachine.*

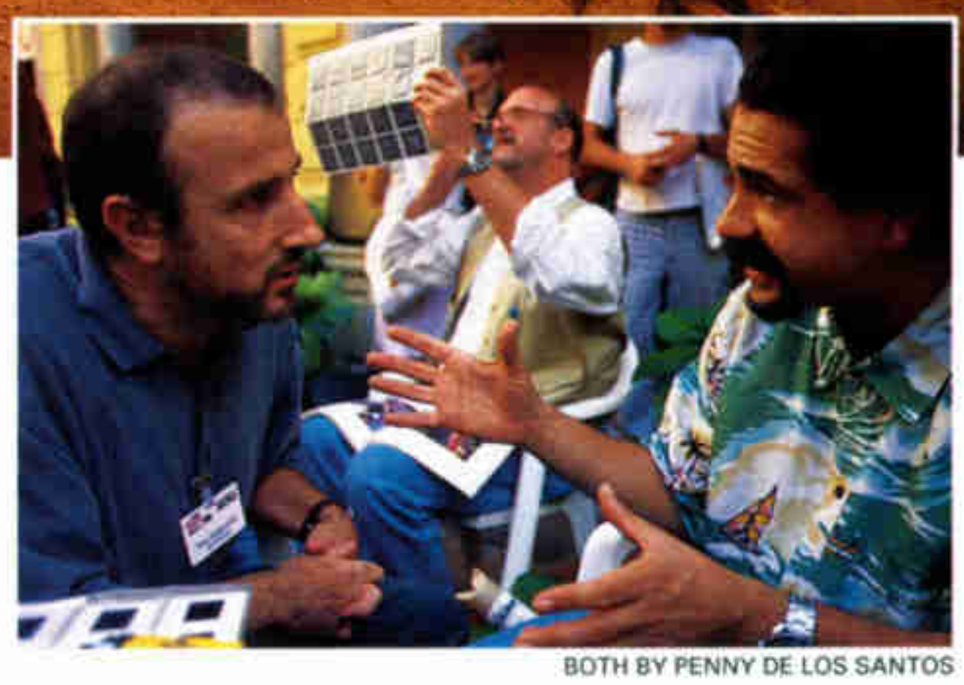
TEXT BY ALLEN CARROLL
Chief Cartographer

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BOTH BY PENNY DE LOS SANTOS

Cool Shots and Hot Tips

Anonymous legs behind famous faces, workers position portraits by Helmut Newton for the Visa Pour l'Image photojournalism festival in Perpignan, France. Freelancer Vincent Musi (inset, at right) critiques the work of another photographer at the event. Can't make it to France? Then come online, where digital galleries take you into the sea, across rural China, along the streets of Sarajevo. Get photographers' insights and advice, profiles of GEOGRAPHIC shooters, lists of photo events, and links—all at *www.nationalgeographic.com/photography/*.

■ Read "Selma to Montgomery" in this issue and tell us at . . . */ngm/0002* about the times you've summoned up courage to fight injustice.

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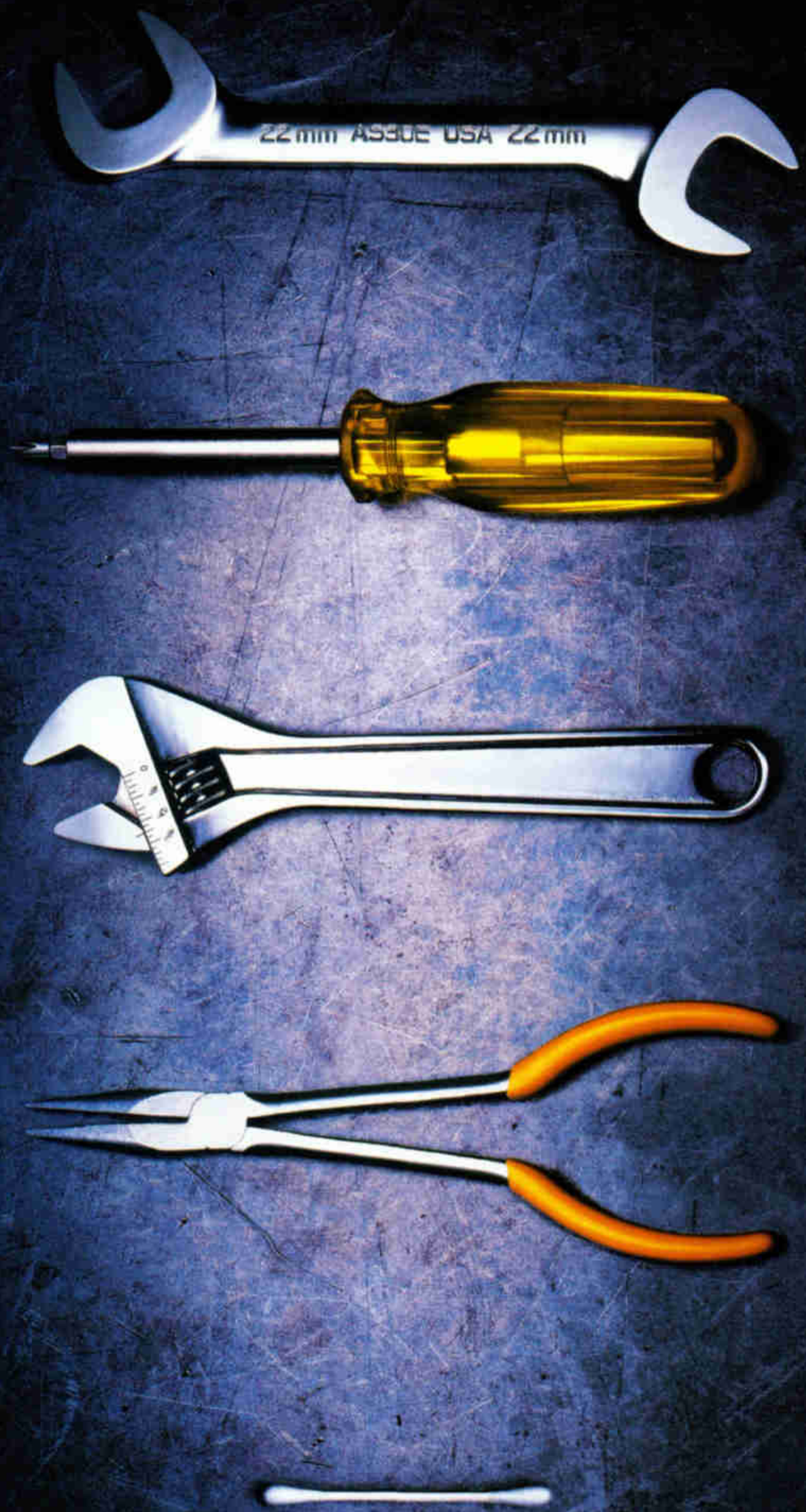
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NATIONAL GEOGRAPHIC (ISSN 0027-9358) IS PUBLISHED MONTHLY BY THE NATIONAL GEOGRAPHIC SOCIETY, 1145 17TH ST. NW, WASHINGTON, DC 20036-4688.
$29.00 A YEAR FOR U.S. DELIVERY, $5.00 PER SINGLE COPY (INCLUDES POSTAGE AND HANDLING). PERIODICALS POSTAGE PAID AT WASHINGTON, DC,
AND AT ADDITIONAL MAILING OFFICES. POSTMASTER: SEND ADDRESS CHANGES TO NATIONAL GEOGRAPHIC, PO BOX 63002, TAMPA, FL 33663-3002.



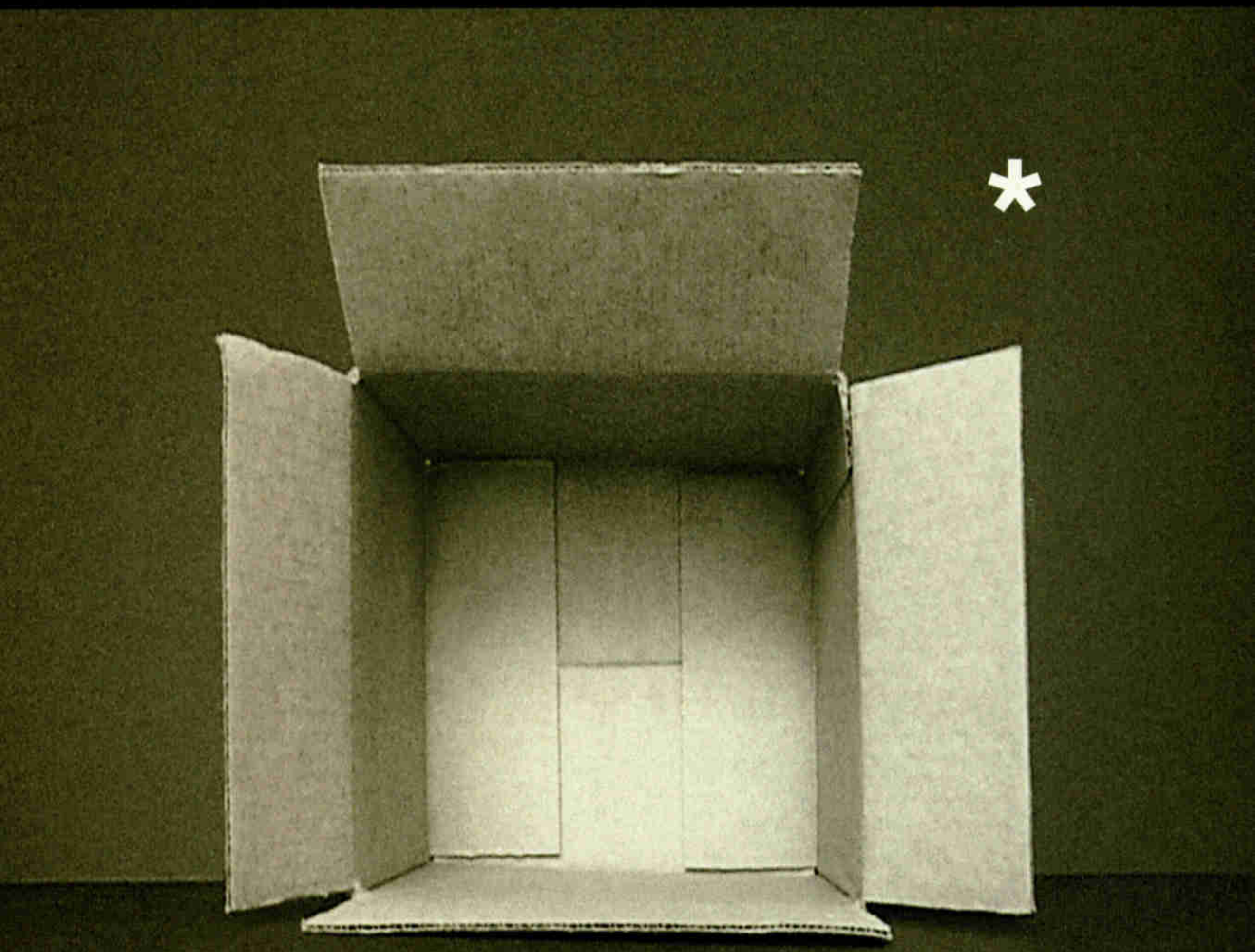
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